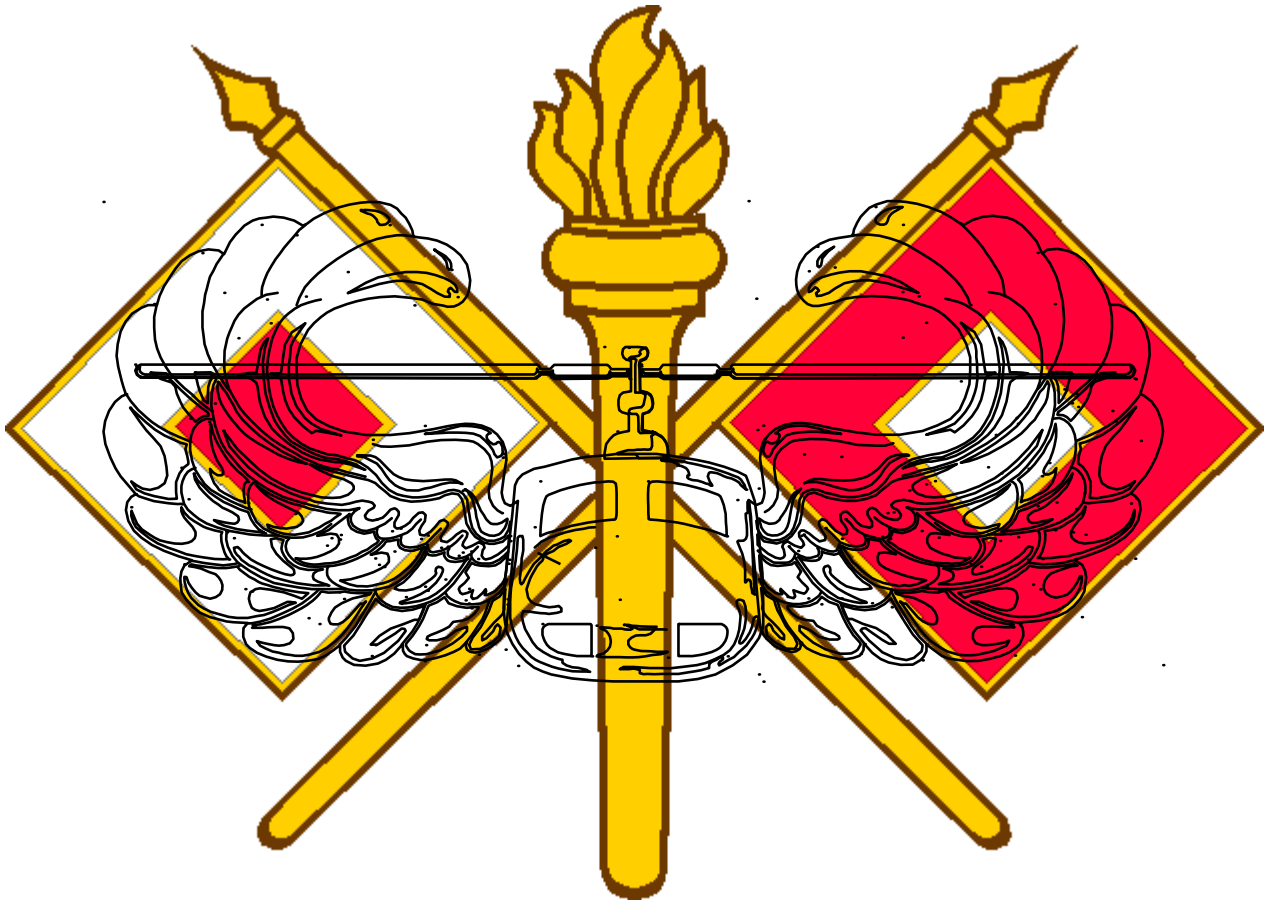
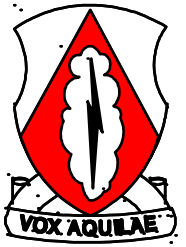
101st AIRBORNE DIVISION (AIR



COMMANDER'S SIGNAL HANDBOOK

VOICE OF THE EAGLE



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PURPOSE

To provide unit commanders of the 101st Airborne Division (Air Assault) and the 101st Corps Support Group and their staffs a clear and concise guide that:

A) Outlines Habitual Relationships With Supported Units

B) Outlines the Signal Support Available From the 501st Signal Battalion

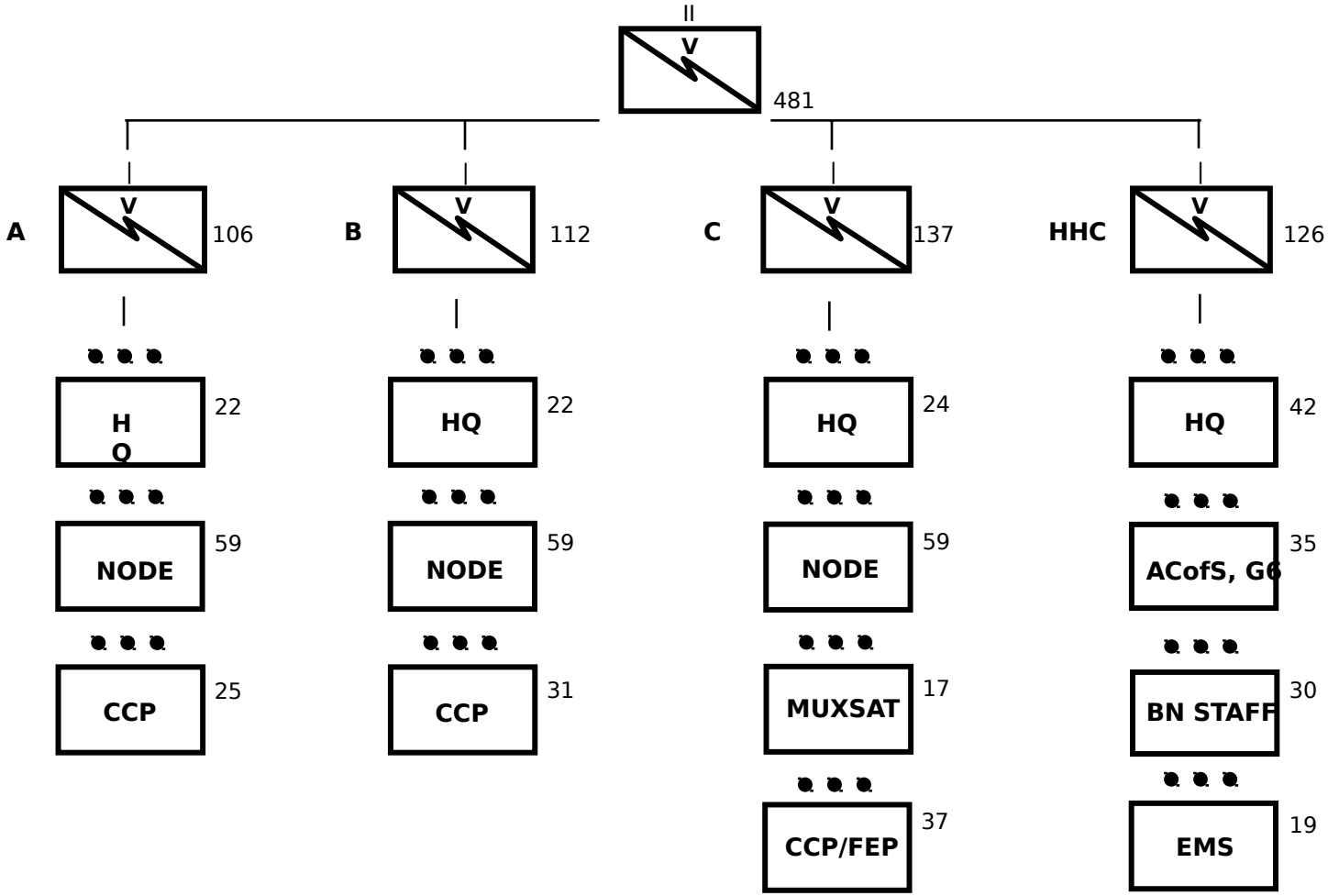
C) Outlines Equipment Capabilities

D) Outlines Standard Signal Battalion Support Packages

501st SIGNAL BATTALION MISSION

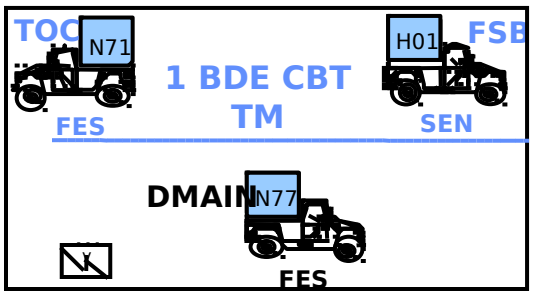
To deploy in 36 hours, worldwide, to establish and sustain communications systems in support of 101st Airborne Division(Air Assault) operations.

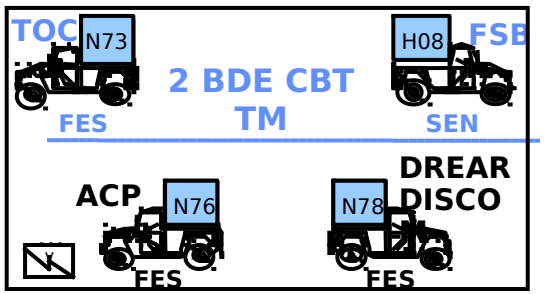
501ST SIGNAL BATTALION ORGANIZATION

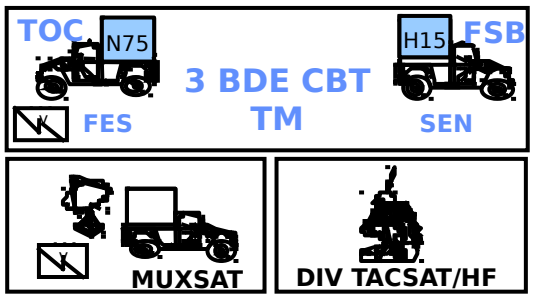


EAGLE LINK

HABITUAL RELATIONSHIPS







DEDICATED CP SUPPORT *METT-T DEPENDENT*

SWITCHES SHADED IN BLUE ARE HSMUX CAPABLE

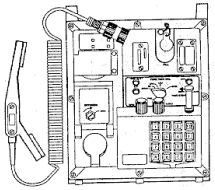
MSE TERMINAL DEVICES

DIGITAL NON-SECURE VOICE TERMINAL (DNVT) TA-954, TA-1035, TA-1042

The DNVT is a four-wire, common battery, digital telephone operating at a 16 or 32 KB/S data rate. (The TA-1042 is also capable of operating in local battery mode.) The DNVT connects to an MSE switch by WF-16 wire. (Planning length: two miles) The TA-1035 and TA-1042 have data ports for connecting the UXC-7 fax and other data devices.

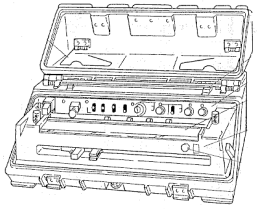
DIGITAL SUBSCRIBER VOICE TERMINAL (DSVT) KY-68

The DSVT is a four-wire, common battery, digital telephone operating at a 16 or 32 KB/S data rate. The DSVT connects to an MSE switch by WF-16 wire. (Planning length: two miles) The KY-68 has a data port for connecting the UXC-7 fax and other data devices.



LIGHTWEIGHT DIGITAL FACSIMILE (LDF) UXC-7

The UXC-7 fax is an impact facsimile machine capable of transmitting over the MSE system as well as SINCGARS. The UXC-7 can send in black and white or eight gray scales and prints using standard carbon paper sets. When transmitting over MSE the UXC-7 can send in a simultaneous read/write mode (MODE A) or a store and forward, 'burst' transmission mode (MODE B). The UXC-7 must connect to the data port of a DNVT, DSVT, or MSRT.



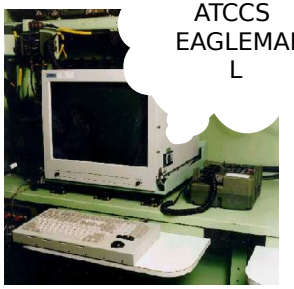
MSE TERMINAL DEVICES

MOBILE SUBSCRIBER RADIO TELEPHONE TERMINAL (MSRT) VRC-97

The MSRT is the 'cellular telephone' of the MSE network. The VRC-97 system includes a RT-1539 VHF radio, a KY-68 Digital Subscriber Voice Terminal (DSVT), and a vehicular and/or stand-alone installation kit. The MSRT is a full-duplex, digital radio telephone system. The MSRT connects to the MSE network by VHF FM radio. The MSRT must be within the 15 KM footprint of a Radio Access Unit (RAU), loaded with the correct frequency plan and COMSEC, and affiliated to place or receive calls. A moving MSRT will automatically re-affiliate itself when moving from one RAU footprint to another. However, unlike commercial cellular telephone, calls in progress cannot transfer and will terminate if the MSRT leaves the RAU footprint.

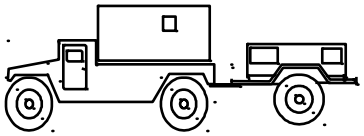
EAGLEWEB

Subscriber units can connect local area networks (LAN) to MSE switches for data communications. Most MSE switches can support two ETHERNET LAN segments. Each LAN segment can be up to 185 meters (without repeaters) total length and can include up to 253 terminals per segment. LAN terminals are user owned standard PCs with ETHERNET adapters and TCP/IP software. MSE passes data over the network using various wide area network switching techniques, allowing users to conduct file transfers, send E-mail, view tactical web pages, and conduct STAMIS and ATCCS information processing with other users in the MSE and connected networks.



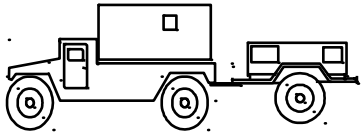
MSE RADIO SYSTEMS

TRC-190 (V)1 AND (V)3 LINE-OF-SIGHT RADIO (LOS (V)1 AND (V)3)



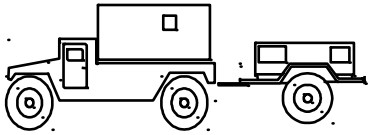
The TRC-190's line-of-sight (LOS) radios are the main link between the nodes of the MSE network. The (V)1 contains one complete GRC-226 UHF radio and normally provides multichannel connectivity from small extension nodes and remote RAUs to a node center or FES. The (V)3 contains three complete GRC-226's. It normally locates at the node center, providing radio links to other node centers and to small extension nodes and remote RAUs in the area. The LOS radio has a planning range of 40 KM. There are 15 LOS (V)1's and 12 LOS (V)3's in the Signal Battalion.

TRC-191 RADIO ACCESS UNIT (RAU)



The TRC-191 provides MSRT users with access to the MSE network. The TRC-191 contains eight RT-1539 radios which interface with the RT-1539 in the subscriber's MSRT. A local RAU sets up at each node center and connects with the node center switch by cable. A remote RAU sets up some distance from the node center and connects via an associated LOS (V)1. The RAU supports up to 50 MSRTs within its 15 KM radius 'footprint'. Up to eight MSRTs can have calls in progress simultaneously on one RAU. There are 3 local RAU's and 3 remote RAUs in the Signal Battalion.

TRC-198 (V)1 LINE-OF-SIGHT RADIO (LOS (V)X)



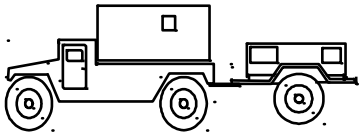
The TRC-198 is the line-of-sight radio system for the contingency communications package. The LOS (V)X contains two complete GRC-226 radio systems. It differs from the LOS (V)3 in that each of its radios is dismountable to provide extra flexibility during contingency operations. There are 4 LOS (V)X's in the Signal Battalion.

TRC-198 (V)2 DISMOUNTED LINE-OF-SIGHT RADIO (DLOS)

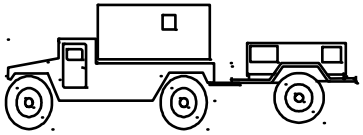
The DLOS provides one complete GRC-226 radio system in two transit cases. The DLOS fills the role of the LOS (V)1 during contingency operations, tying extensions into the network. The DLOS is normally transported on a support vehicle. The 501st Signal Battalion, however, has mounted the DLOS radios onto a rack in the back of the support vehicles. There are 4 DLOS' in the Signal Battalion each capable of providing 2 LOS links.

MSE SWITCHING SYSTEMS

TTC-47
NODE CENTER SWITCH (NCS)



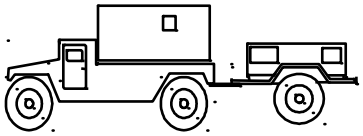
ON-306



OL-413

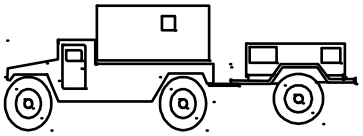
The TTC-47 is the switching hub, subscriber affiliation and COMSEC control center for the MSE network. It does not normally provide direct subscriber support. The TTC-47 consists of two shelters: the ON-306 switching group and the OL-413 operations group. There are 3 TTC-47's in the Signal Battalion.

TTC-48 (V)1 AND (V)2
SMALL EXTENSION NODE SWITCH (SEN)



The TTC-48 is the primary subscriber access point in the MSE network for subscribers within the BSAs, separate battalions, DIVARTY, and the AVN BDE CPs. The TTC-48 co-locates at the subscriber location, providing connections for DNVTs, DSVTs, and TACLAN. The TTC-48 provides local switching and interfaces with the rest of the MSE network over the line-of-sight radio link from its associated TRC-190. The TTC-48 (V)2 also provides CNRI access. There are 8 TTC-48 (V)1's and 4 TTC-48 (V)2's in the Signal Battalion.

TTC-50
FORCED ENTRY SWITCH (FES)



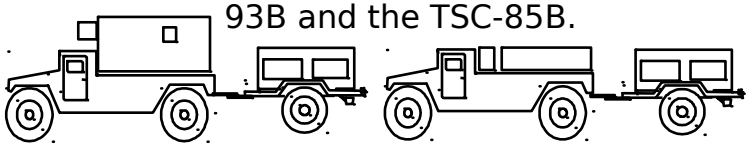
The TTC-50 FES is a hybrid assemblage developed to support contingency forces. The FES combines the switching capability of the TTC-47, the subscriber support capability of the TTC-48, and the TRC-191's ability to support MSRT subscribers which provides a full range of communications support in one shelter. There are 6 TTC-50's in the Signal Battalion (ACP, DMAIN, DREAR, and each Infantry Brigade CP).

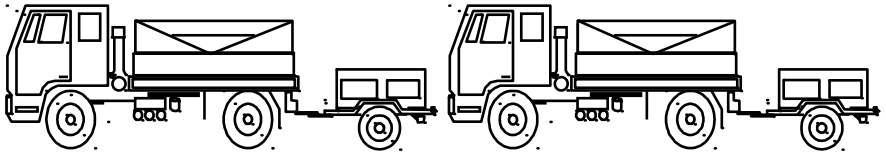
TTC-51
DISMOUNTED EXTENSION SWITCH (DES)

The TTC-51 DES provides MSE extension switch-board support during contingency operations. The DES is contained in two transit cases and can support up to sixteen telephones. The DES is used where a full SEN is not appropriate or not available. The DES connects to the MSE network by multichannel TACSAT, by cable (up to one mile) to a FES, or with a DLOS radio system (up to 40 km). There are 2 DES' in the Signal Battalion.

MULTICHANNEL SATELLITE TERMINALS (MUXSAT)

Ground Mobile Forces (GMF) Multichannel Tactical Satellite terminals provide long-haul range extension for the Division's MSE network, especially during Air Assault operations. The current generation of terminals operate in the SHF X-band and interface primarily with the Defense Satellite Communications System (DSCS) II and III satellite constellations. Satellite availability and access requests are important planning considerations for MUXSAT use. MUXSAT can overcome most range and terrain limitations. Direct connectivity is possible to North and South America, Europe, Africa, and South West Asia from Ft Campbell. In a full Division deployment, MUXSAT is used to augment line-of-sight transmission systems, tie into adjacent and higher units, and link back into the sustaining base. The 101st Airborne Division (Air Assault) has two types of GMF satellite terminals, the TSC-93B and the TSC-85B.





TSC-93B SATELLITE COMMUNICATIONS TERMINAL

The TSC-93B is a multichannel, X-band satellite terminal, part of the GMF family of terminals. The TSC-93B can operate as a stand-alone terminal or as a long-haul link for MSE equipment. The system consists of two heavy HMMWVs (one shelter carrier and one antenna carrier), and two 10KW generators. During operations the TSC-93B's will normally be found with the Assault CP and selected Infantry Brigade CPs, providing connectivity from the objective area back to the ISB or sustaining base. There are 3 TSC-93B's in the Signal Battalion.

TSC-85B SATELLITE COMMUNICATIONS TERMINAL

The TSC-85B is a multichannel, X-band satellite terminal, part of the GMF family of terminals. The TSC-85B serves as a hub for satellite terminals. It can link to four other satellite terminals at once. One TSC-85B can tie up to four TSC-93Bs into the MSE network in a 'hub/spoke' configuration. It can also connect with a combination of TSC-85s and -93s in a 'net/mesh' configuration. The TSC-85B consists of a FMTV antenna carrier and a FMTV shelter carrier. Each vehicle pulls a 15KW generator trailer. The Division's TSC-85Bs normally set up at the DREAR and the DMAIN, providing long-haul connectivity for the Division's CPs. There are 2 TSC-85B's in the Signal Battalion.

MSE SIGNAL NODES

PACKAGE:	HABITUALLY SUPPORTS	CAPABILITY
NODE CENTER MGT FAC TRC-190 (V)3 x 4 TRC-191 TTC-47 SUPPORT	AREA SUPPORT	SWITCHING HUB RAU COVERAGE SYSTEM MANAGEMENTNETWO NETWORK COMSEC MGT
CCPS TTC-50 TRC-198(V)1 x 2 SUPPORT	DMAIN AND DREAR	117 DNVT'S 1 TACLAN PORT 8 COMMERCIAL LINES 8 DSN LINES RAU COVERAGE CNRI
CCES TTC-50 DLOS RADIOS SUPPORT	ACP AND INFANTRY BDES	47 DNVT'S 1 TACLAN PORT 8 COMMERCIAL LINES 8 DSN LINES RAU COVERAGE CNRI

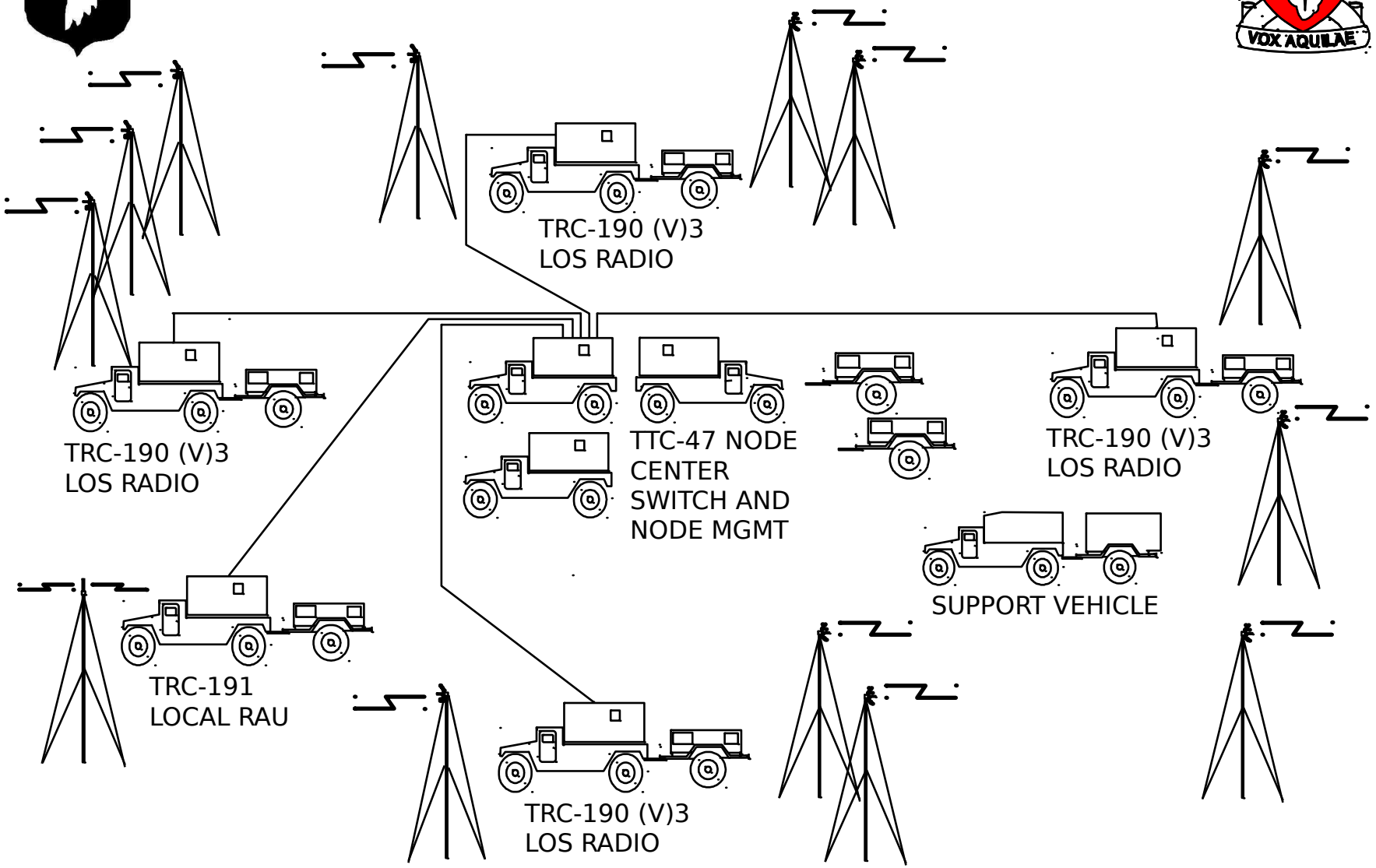
VOICE OF THE EAGLE

MSE SIGNAL NODES

PACKAGE:			HABITUALLY SUPPORTS	CAPABILITY
SEN (V)1			ALL FSBS 101CSG 2/44 ADA 326 ENG 311 MI 2-17 CAV	26 DNVT'S 2 TACLAN PORTS 2 COMMERCIAL LINES
TTC-48 (V)1	TRC-190 (V)1	SUPPORT		
SEN (V)2			DMAIN 101AVN 159 AVN DIVARTY	41 DNVT'S 2 TACLAN PORTS 2 COMMERCIAL LINES CNRI
TTC-48 (V)1	TRC-190 (V)1	SUPPORT		
REMOTE RAU			AREA SUPPORT	RAU COVERAGE
TRC-191	TRC-190 (V)1	SUPPORT		

VOICE OF THE EAGLE

NODE CENTER



VOICE OF THE EAGLE

NODE CENTER

NODE CENTERS FORM THE CENTRAL HUBS FOR THE MSE NETWORK. NODE CENTERS SET UP TO PROVIDE MUTUAL CONNECTIVITY AND AREA SUPPORT TO THE DIVISION.

SUPPORT PROVIDED:

- BACKBONE NETWORK CONNECTIVITY

- SUBSCRIBER NUMBER MANAGEMENT

- NETWORK COMSEC MANAGEMENT

- LINE-OF-SIGHT RADIO LINKS TO ADJACENT NODE CENTERS, FESs, SENs, REMOTE RAU, ADJACENT AND HIGHER UNITS.

NODE CENTERS DO NOT NORMALLY SET UP AT SUBSCRIBER LOCATIONS AND DO NOT PROVIDE DIRECT SUPPORT. FUEL AND PERSONNEL SUPPORT IS PROVIDED BY 501ST SIGNAL BATTALION ORGANIC ASSETS.

EQUIPMENT AND PERSONNEL:

- THE 501ST SIGNAL BATTALION HAS THREE NODE CENTERS

- 18 HMMWVs, 7 GENERATOR TRAILERS, AND 9 CARGO TRAILERS PER NODE CENTER

- 30-40 PERSONNEL PER NODE CENTER

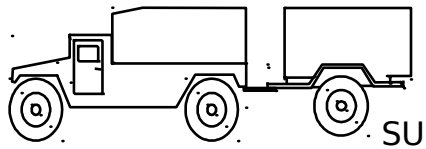
PLANNING CONSIDERATIONS:

- FUEL: 60 GAL / 72 HRS
- SLINGLOAD:
  - 12 X CH-47s
- RANGE:
  - 40 KM FOR LOS RADIO
  - 15 KM RADIUS LOCAL RAU FOOTPRINT

CONTINGENCY COMMUNICATIONS PACKAGE (CCP) CAPABILITIES

- COMMONLY REFERRED TO AS A FORCED ENTRY SWITCH (FES)
- THE SIGNAL BATTALION HAS TWO VERSIONS OF THE CCP - THE CONTINGENCY COMMUNICATIONS PARENT SWITCH (CCPS) AND THE CONTINGENCY COMMUNICATIONS EXTENSION SWITCH (CCES)
- PROVIDES CONNECTIVITY FROM A FORCED ENTRY LOCATION TO THE SUSTAINING BASE OR INTERMEDIATE STAGING BASE VIA MUXSAT
- SUPPORTS CONNECTIVITY TO AN ADJACENT MSE SWITCH VIA LINE-OF-SIGHT (LOS) RADIO (PLANNING RANGE 40 KM)
- CAPABLE OF HELICOPTER SLINGLOAD VIA CH-47
- FULLY COMPATIBLE WITH ALL MSE SYSTEMS

CONTINGENCY COMMUNICATIONS PARENT SWITCH (CCPS)



SUPPORT VEHICLE

TO CNRI USERS

TO MSRTs

TO ADJACENT NODE CENTER, FES, SEN, or DES

J-1077
13 DNVTs

FES WITH 10KW GENERATOR

DLTU x 3

ALTU
COMMERCIAL
OR DSN
ACCESS

35
DNVT'S
per DLTU

TACLAN -
UP TO 253
HOSTS

TRC-198 LOS RADIO WITH 5 KW GENERATORS

TO CCPS
(DISTANCE UP TO 40 KM)

1.5 KW HONDA GENERATOR

DISMOUNTED
LOS RADIO

DISMOUNTED
SEN (DES)

DNVT'S

TRC-198 LOS RADIO WITH 5 KW GENERATORS

VOICE OF THE EAGLE

CONTINGENCY COMMUNICATIONS PARENT SWITCH (CCPS)

THE CCPS PACKAGE NORMALLY SUPPORTS THE DIVISION MAIN AND REAR CPs

SUPPORT PROVIDED:

- 117 WIRE LINE TERMINATIONS
- 8 COMMERCIAL TELEPHONE LINES
- 8 DSN TELEPHONE LINES
- RAU COVERAGE (4 RT-1539'S)
- COMBAT NET RADIO INTERFACE
- DISMOUNTED EXTENSION SWITCH (DES) FOR CONTINGENCY OPERATIONS
- UP TO SIX LINE-OF-SIGHT RADIO LINKS TO ADJACENT UNITS
  - IF DES GOES FORWARD ONE DLOS WILL GO WITH IT AND ONE WILL BE USED AT THE CCPS

THE CCPS PACKAGE RECEIVES CLASS I,III, AND V FROM THE SUPPORTED UNIT. THE 501ST SIGNAL BATTALION PROVIDES NETWORK AND DS MAINTENANCE SUPPORT.

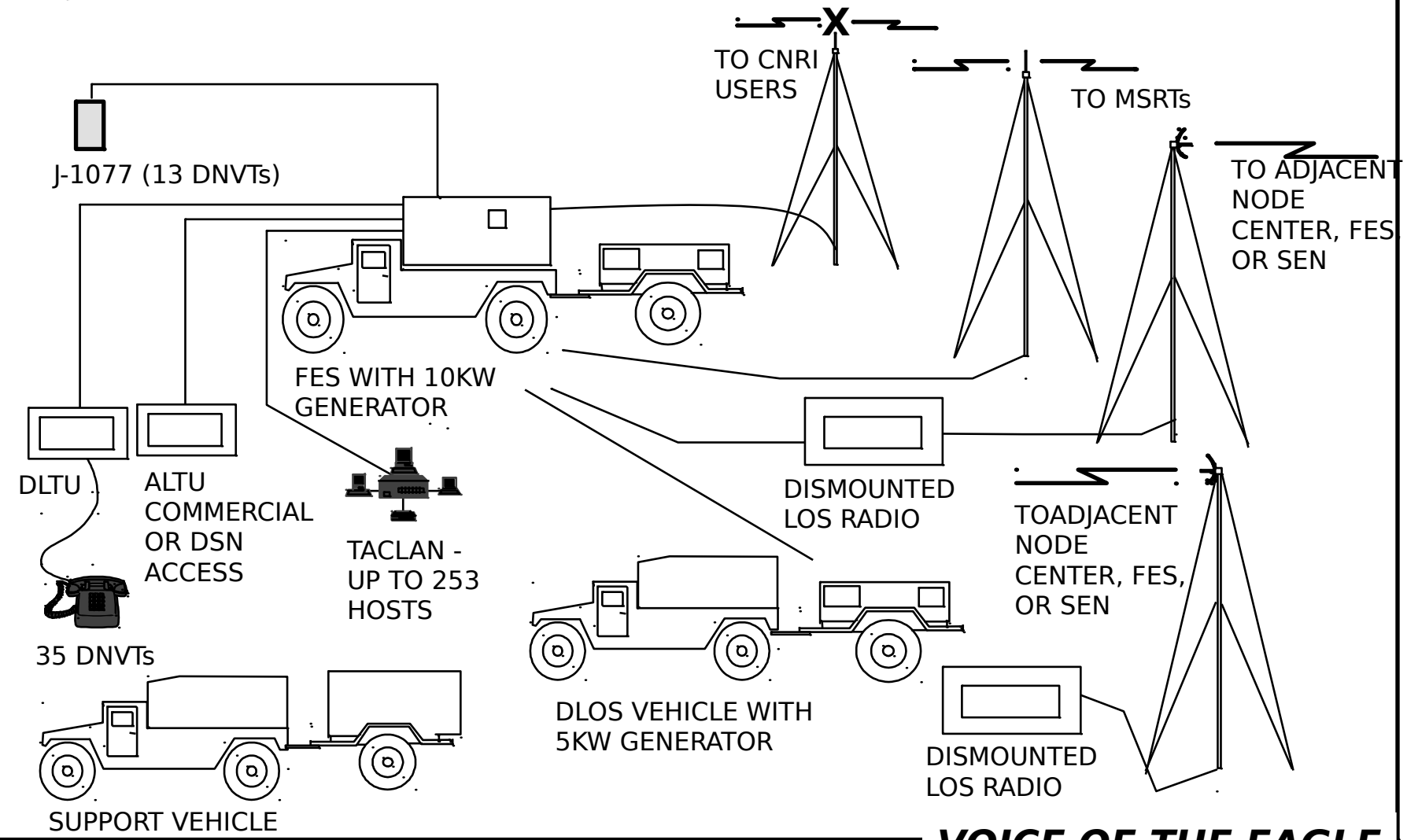
EQUIPMENT AND PERSONNEL:

- THE 501ST SIGNAL BATTALION HAS TWO CCPS PACKAGES
- FOUR HMMWVs, THREE GENERATOR TRAILERS AND ONE CARGO TRAILER PER CCPS
- NINE PERSONNEL PER CCPS

PLANNING CONSIDERATIONS PER CCPS :

- FUEL:
  JP8: 60 GAL / 72 HRS
  MOGAS: 5 GAL / 24 HRS FOR DES CONTINGENCY OPERATION
- SLINGLOAD:
  - 6 X CH-47s
- RANGE:
  - 40 KM FOR LOS RADIO
  - 15 KM RADIUS RAU FOOTPRINT

CONTINGENCY COMMUNICATIONS EXTENSION SWITCH (CCES)



VOICE OF THE EAGLE

CONTINGENCY COMMUNICATIONS EXTENSION SWITCH (CCES) PACKAGE

THE CCES PACKAGE NORMALLY SUPPORTS THE ACP AND THE INFANTRY BRIGADE CPs

SUPPORT PROVIDED:

- 47 WIRE LINE TERMINATIONS

- 8 COMMERCIAL TELEPHONE LINES

- 8 DSN TELEPHONE LINES

- RAU COVERAGE (4 RT-1539'S)

- COMBAT NET RADIO INTERFACE

- TWO LINE-OF-SIGHT RADIO LINKS TO ADJACENT UNITS

THE CCES PACKAGE RECEIVES CLASS I,III, AND V FROM THE SUPPORTED UNIT. THE 501ST SIGNAL BATTALION PROVIDES NETWORK AND DS MAINTENANCE SUPPORT.

EQUIPMENT AND PERSONNEL:

- THE 501ST SIGNAL BATTALION HAS FOUR CCES PACKAGES

- THREE HMMWVs, TWO GENERATOR TRAILERS, AND ONE CARGO TRAILER PER CCES

- NINE PERSONNEL PER CCES

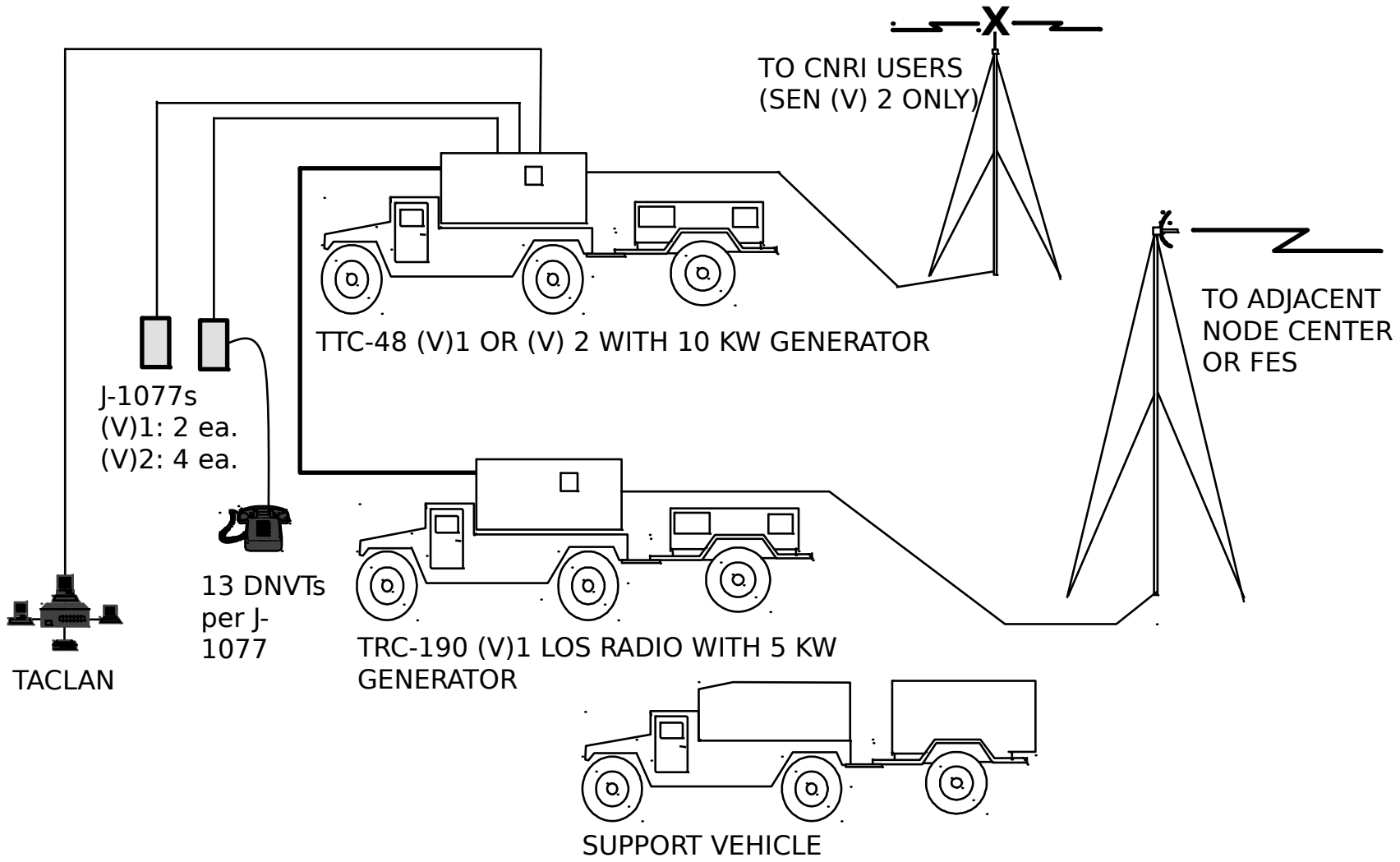
PLANNING CONSIDERATIONS PER CCES :

- FUEL: 60 GAL / 72 HRS

- SLINGLOAD:
  - 3 X CH-47s

- RANGE:
  - 40 KM FOR LOS RADIO
  - 15 KM RADIUS RAU FOOTPRINT

SMALL EXTENSION NODE (SEN) (V)1 AND (V)2



SMALL EXTENSION NODE (SEN) (V)1 AND (V)2

SENs NORMALLY SUPPORT DIVARTY, THE AVIATION BRIGADES, SEPARATE BATTALIONS AND BRIGADE SUPPORT AREAS.

SUPPORT PROVIDED:

- 26 (V)1 OR 41 (V)2 WIRE LINE TERMINATIONS

- 2 COMMERCIAL TELEPHONE LINES

- COMBAT NET RADIO INTERFACE
  *THE FOUR SEN (V)2'S ARE EQUIPPED WITH CNRI

- ONE LINE OF SIGHT RADIO LINK TO ADJACENT NODE CENTER OR FES

THE SEN (V)1 OR (V)2 PACKAGE RECEIVES CLASS I,III, AND V FROM THE SUPPORTED UNIT. THE 501ST SIGNAL BATTALION PROVIDES NETWORK AND DS MAINTENANCE SUPPORT.

EQUIPMENT AND PERSONNEL:

- THE 501ST SIGNAL BATTALION HAS EIGHT SEN (V)1's AND FOUR SEN (V)2's

- THREE HMMWVs, TWO GENERATOR TRAILERS, AND ONE CARGO TRAILER PER SEN

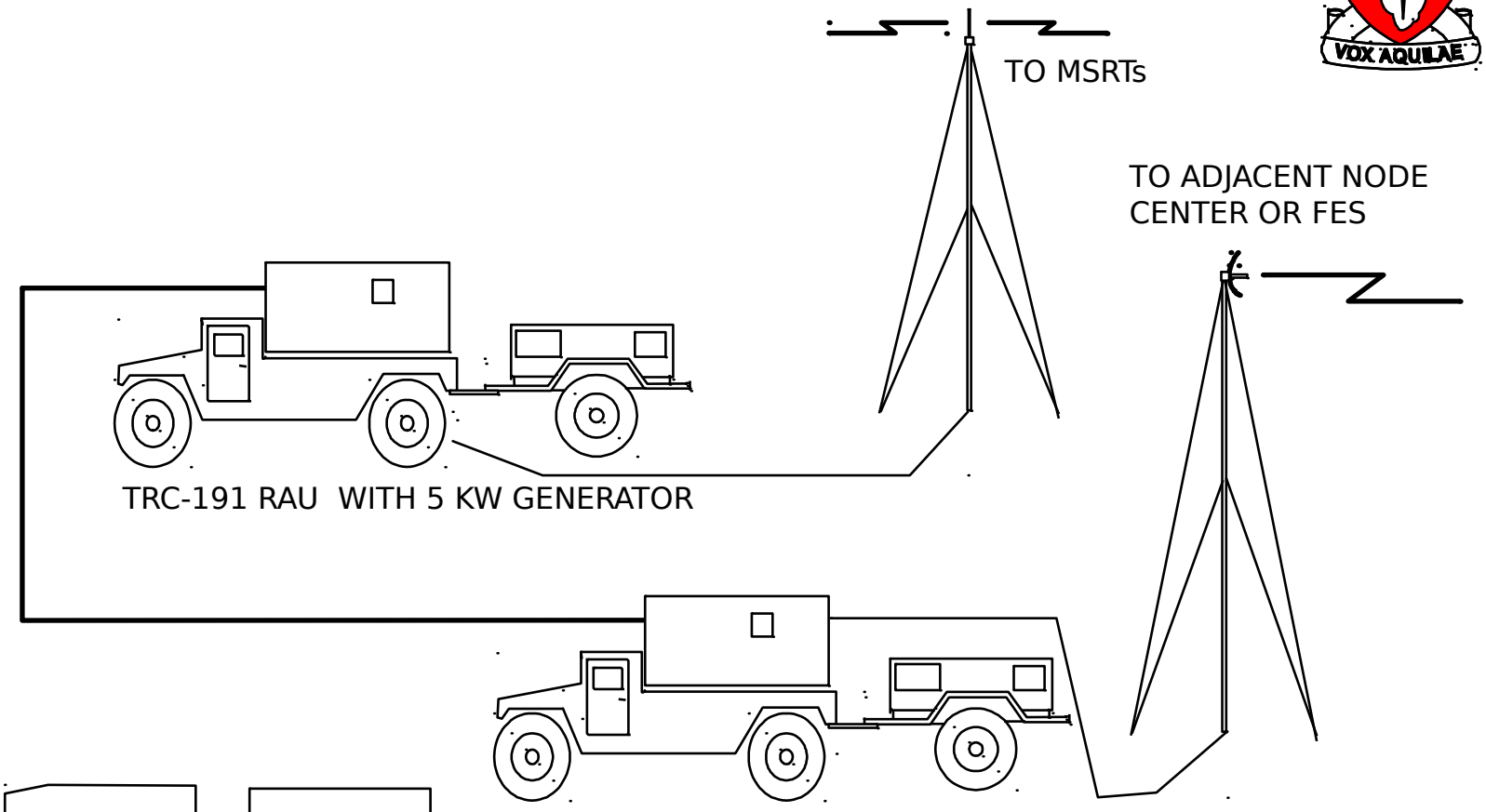
- SIX PERSONNEL PER SEN

PLANNING CONSIDERATIONS PER SEN:

- FUEL: 60 GAL / 72 HRS

- SLINGLOAD:
  - 3 X CH-47s
- RANGE:
  - 40 KM FOR LOS RADIO

REMOTE RADIO ACCESS UNIT (RAU)



REMOTE RADIO ACCESS UNIT (RAU)

THE REMOTE RAU LOCATES ITSELF TO PROVIDE MSRT SUPPORT IN THOSE PARTS OF THE DIVISION AREA NOT COVERED BY A NODE CENTER OR FES.

SUPPORT PROVIDED:

- RAU COVERAGE (8 RT-1539s)

- ONE LINE-OF-SIGHT RADIO LINK TO NODE CENTER OR FES

REMOTE RAUs NORMALLY DO NOT SET UP AT SUBSCRIBER LOCATIONS. REMOTE RAUs NORMALLY RECEIVE FUEL AND PERSONNEL SUPPORT FROM 501st SIGNAL BATTALION ORGANIC ASSETS.

EQUIPMENT AND PERSONNEL:

- THE 501ST SIGNAL BATTALION HAS THREE REMOTE RAU PACKAGES.

- THREE HMMWVs, TWO GENERATOR TRAILERS, AND ONE CARGO TRAILER PER REMOTE RAU

- SIX PERSONNEL PER REMOTE RAU

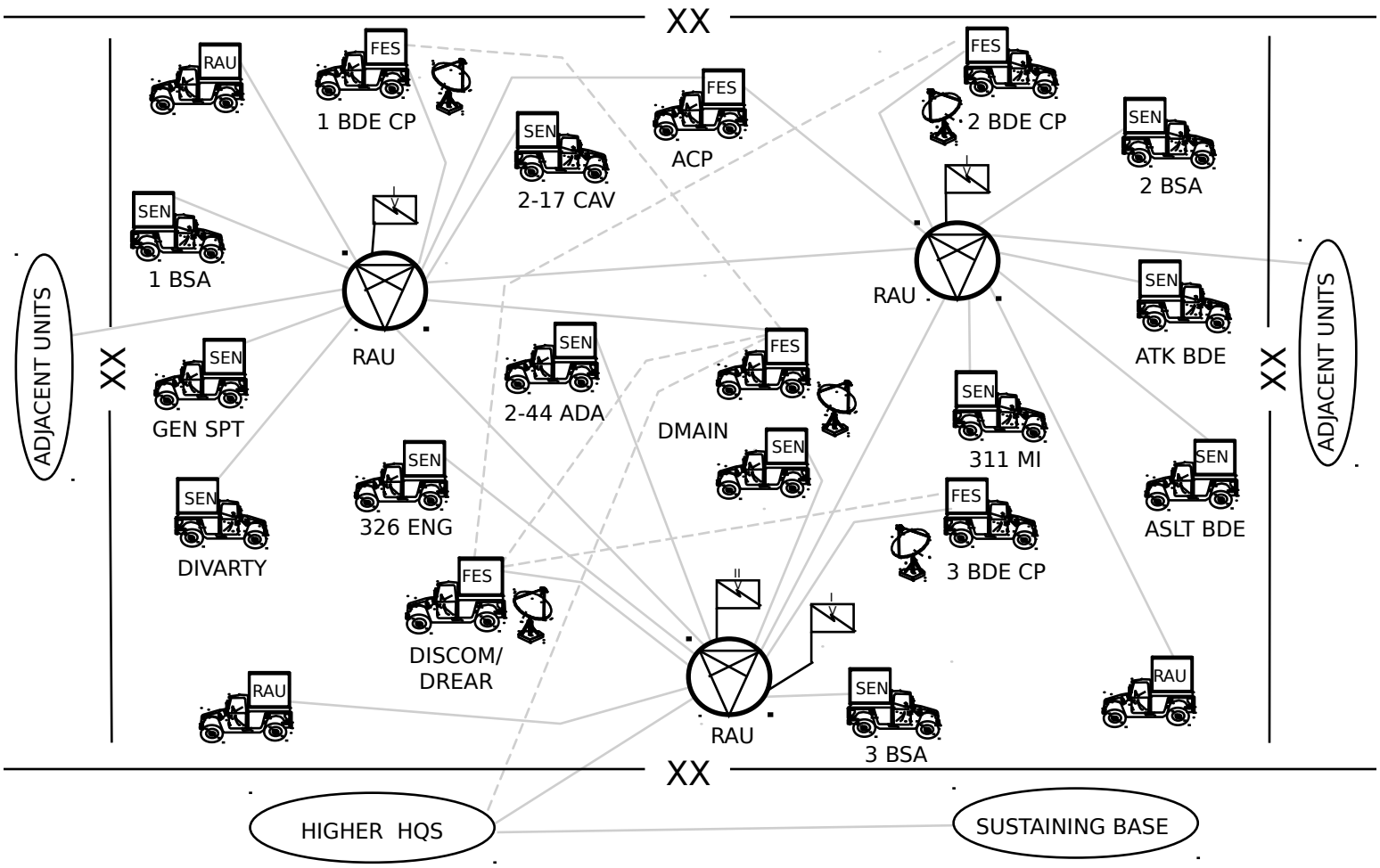
PLANNING CONSIDERATIONS PER REMOTE RAU:

- FUEL: 60 GAL / 72 HRS

- SLINGLOAD:
  - 3 X CH-47s

- RANGE:
  - 40 KM FOR LOS RADIO
  - 15 KM FOR RAU FOOTPRINT

MATURE DIVISION MSE NETWORK



COMBAT NET RADIO INTERFACE (CNRI)

TSEC/KY90 SECURE DIGITAL NET RADIO INTERFACE UNIT (SDNRIU)

The TSEC/KY90 is a ruggedized COMSEC device used in the field, vehicle, or shelter configurations. The TSEC/KY90 acts as an interface between single channel combat net radios and the MSE Network. This allows FM radios to call the KY90 and have that call transferred to an MSE Subscriber. The 501st Signal Battalion has 11 KY90s and they are found at the DMAIN, DREAR, ACP, 1st BDE, 2nd BDE, 3rd BDE, 159th AVN, 101st AVN, DIVARTY, DSEN (2). The 501st Signal Battalion provides Combat Net Radio Interface (CNRI) support from non-MSE users to MSE subscribers.

SINGLE CHANNEL COMMUNICATIONS

ASIP RT-1523/F

AN/PSC-7

AN/PSC-5

ADVANCED SYSTEM IMPROVEMENT PROGRAM SINGLE CHANNEL GROUND AND AIRBORNE RADIO SYSTEM (ASIP SINCGARS)

VHF FM radio provides reliable, secure voice and data communications for the Division. ASIP SINCGARS, the current generation of VHF FM radios, provides integrated communications security (COMSEC) and can defeat electronic countermeasures (ECM) and direction finding (DF) by frequency hopping (FH). The 501st Signal Battalion provides 4 FM Retransmission teams for the Division FM1 and FM2 Nets.

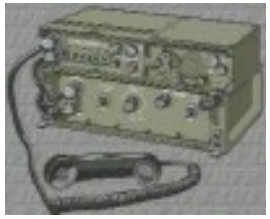
HIGH FREQUENCY (HF) RADIO

HF radio acts as an additional push to talk system, filling the gap between VHF FM (ASIP SINCGARS) and SC TACSAT. The HF radios provide longer range than VHF FM radios. Vehicular HF radios with amplifiers can provide extremely long range communications via skywave propagation. The planning range for the AN/GRC-193 is 2,500 miles (4,023.3 km). The AN/PRC-104 and the AN/GRC-213 planning range is up to 300 miles using the NVIS Antenna (the range varies according to environmental conditions and antennas used.

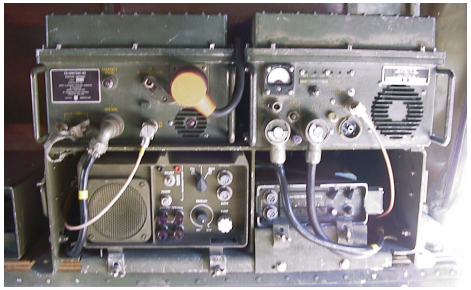
SINGLE CHANNEL TACSAT(SC TACSAT)

The Division uses man-portable UHF SC TACSAT radios to provide long-range push-to-talk communications for selected Division users. SC TACSAT overcomes most terrain and distance limitations. Planning considerations include: UHF satellite access (segment), COMSEC, and battery re-supply. The Division has 46 SC TACSAT terminals (24 AN/PSC-5's and 22 AN/PSC-7's). The Signal Battalion maintains 13 AN/PSC-5's and 18 AN/PSC-7's for distribution based upon METT-T.

AN/PRC-104

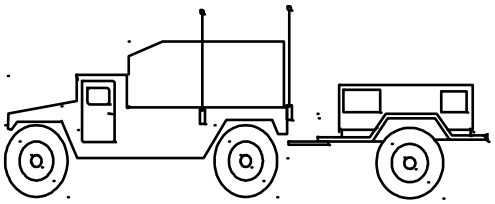


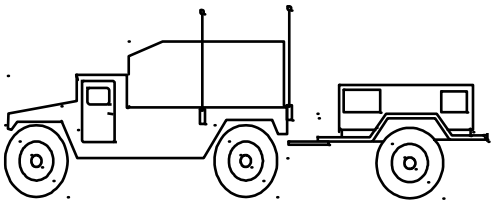
AN/GRC-213



AN/GRC-193

SINGLE CHANNEL TEAMS





'SHARK VEHICLE'

The SHARK provides a range of single-channel communications for the ACP, DMAIN and the DREAR. The SHARK can enter the objective area by slingload, ground convoy, airland, or heavy drop. It provides the following assets to augment the standard MSE communications package:

Two SC TACSAT nets
Two long range HF AM nets

The SHARK can carry the following radios for redundancy or when additional radio nets are required:

Two additional SC TACSAT
Two additional HF
radios

DIVISION FM RETRANSMISSION

The FM Retransmission teams provide range extension of the Division's FM1 and FM2 Nets. Each team can retransmit two VHF FM Nets. The Signal Battalion provides 4 FM Retransmission teams to support the Division's nets.

AIRBORNE ADVANCE TEAM

THE AIRBORNE ADVANCE TEAM (AAT) SUPPORTS THE ADC(O) DURING INITIAL FORCED ENTRY OPERATIONS.

SUPPORT PROVIDED:

- SC TACSAT
- HF NET
- FM NETS

THE AAT PACKAGE RECEIVES CLASS I,III, AND V FROM THE SUPPORTED UNIT. THE 501ST SIGNAL BATTALION PROVIDES NETWORK AND DS MAINTENANCE SUPPORT.

EQUIPMENT AND PERSONNEL:

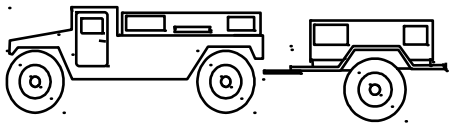
- TWO AN/PSC-5 SC TACSAT TERMINALS
- ONE AN/PRC-104B HF RADIO
- TWO AN/PRC-119A ASIP SINCGARS MANPACKS
- THREE PERSONNEL (ONE CPT - ACofS, G6, DIVISION RADIO OFFICER; TWO 31U20s - C/501SIG BN)

PLANNING CONSIDERATIONS:

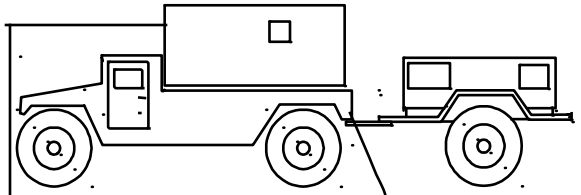
- BATTERIES
  - BA-5590 x 8 per 24 hours

- RANGE:
  - UNLIMITED WITH SATELLITE ACCESS
  - HF: 100 - 300 miles
  - FM: 8 km

DRB CP PACKAGE (MUXSAT + FES)



SATELLITE ANTENNA/
GENERATOR CARRIER



TSC-93B MUXSAT

TO MSRTs

TO CNRI
USERS

TO SUSTAINING
BASE OR ISB

DLTU

J-1077
12 DNVTs

35 DNVTs

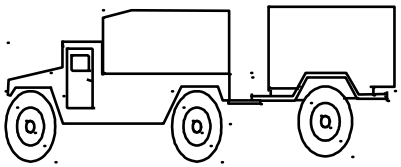
ALTU
COMMERCIAL
OR DSN
ACCESS

TACLAN

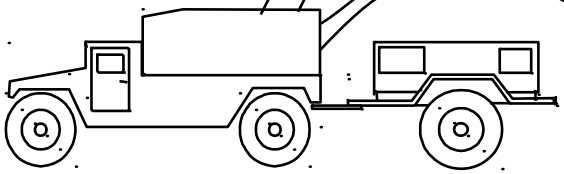
CCES WITH 10KW
GENERATOR

TO
ADJACENT
UNIT

TO SEN



SUPPORT VEHICLE



DLOS VEHICLE WITH
MOUNTED DLOS RADIOS AND
A 5KW GENERATOR

VOICE OF THE EAGLE

DRB CP PACKAGE (MUXSAT + FES)

THE DRB CP PACKAGE NORMALLY SUPPORTS AN INFANTRY BRIGADE TOC. THE SAME PACKAGE IS NORMALLY PROVIDED TO THE ACP DURING AN AIR ASSAULT OR RAPID DEPLOYMENT.

SUPPORT PROVIDED:

- 47 WIRE LINE TERMINATIONS
- 8 COMMERCIAL TELEPHONE LINES
- 8 DSN TELEPHONE LINES
- TACLAN
- RAU COVERAGE (4 RT-1539s)
- COMBAT NET RADIO INTERFACE
- LONG HAUL CONNECTIVITY VIA MUXSAT
- TWO LINE-OF-SIGHT RADIO LINKS TO ADJACENT UNITS
- IF DES GOES FORWARD ONE DLOS WILL GO WITH IT AND ONE WILL BE USED AT THE CCPS

THE DRB CP PACKAGE RECEIVES CLASS I,III, AND V FROM THE SUPPORTED UNIT. THE 501ST SIGNAL BATTALION PROVIDES NETWORK AND DS MAINTENANCE SUPPORT.

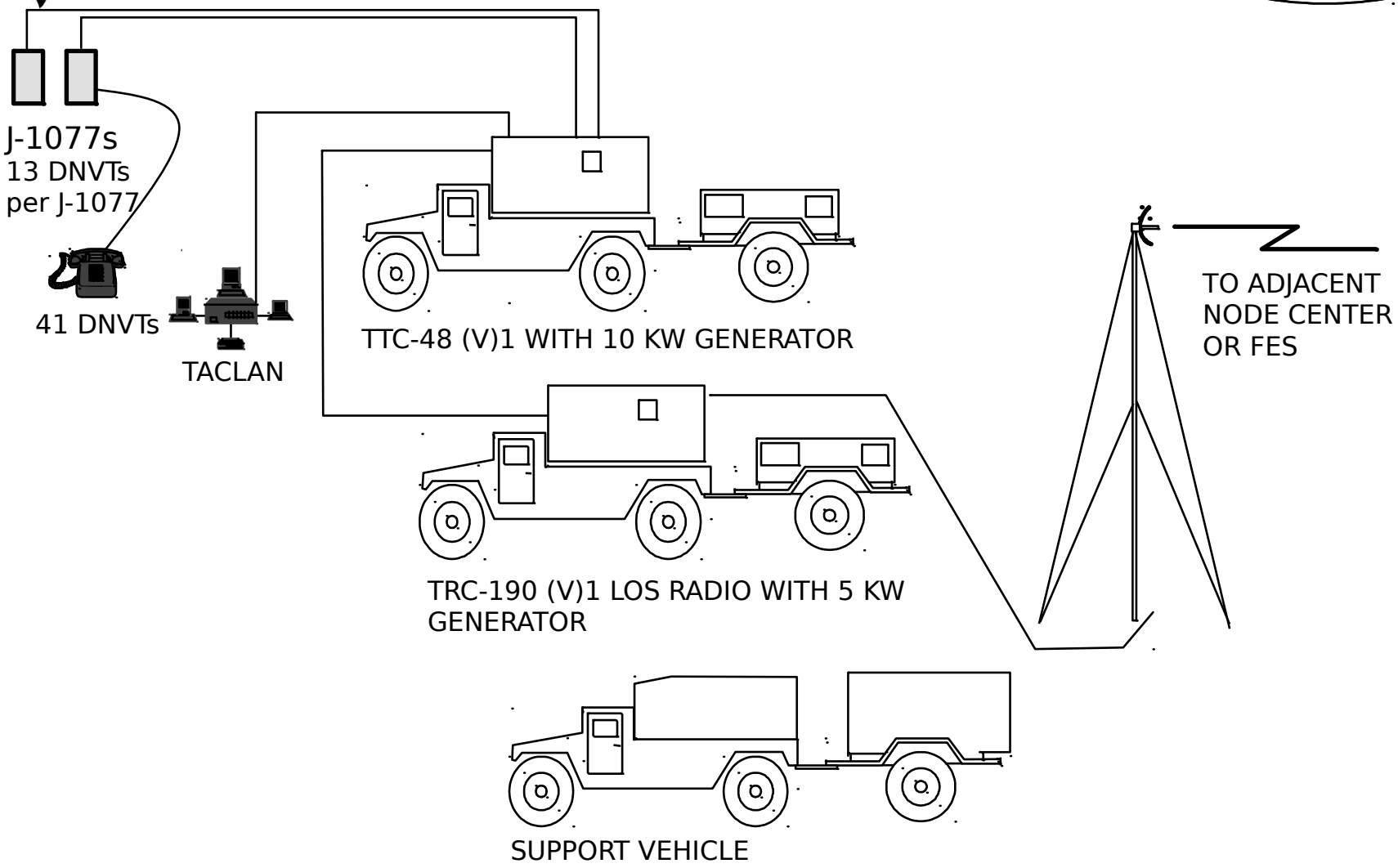
EQUIPMENT AND PERSONNEL:

- FIVE HMMWVs, FOUR GENERATOR TRAILERS, AND ONE CARGO TRAILER
- NINE PERSONNEL

PLANNING CONSIDERATIONS:

- FUEL:
  - JP8: 60 GAL / 72 HRS
  - MOGAS: 5 GAL / 24 HRS FOR DES OPERATION
- RANGE:
  - UNLIMITED WITH SATELLITE ACCESS
  - 40 KM FOR LOS RADIO
  - 15 KM RADIUS RAU FOOTPRINT
- SLINGLOAD:
  - 5 X CH-47s CP PACKAGE
- AIRFRAMES: (AIRLAND ONLY)
  - 3 C-130
  - 1 C-141

DRB BSA PACKAGE



DRB BSA PACKAGE

THE BSA PACKAGE NORMALLY SUPPORTS BRIGADE SUPPORT AREAS

SUPPORT PROVIDED:

- 26 WIRE LINE TERMINATIONS

- 2 COMMERCIAL TELEPHONE LINES

- TACLAN

- LINE-OF-SIGHT RADIO LINK

THE DRB BSA PACKAGE RECEIVES CLASS I,III, AND V FROM THE SUPPORTED UNIT. THE 501ST SIGNAL BATTALION PROVIDES NETWORK AND DS MAINTENANCE SUPPORT.

EQUIPMENT AND PERSONNEL:

- THREE HMMWVs, TWO GENERATOR TRAILERS, AND ONE CARGO TRAILER

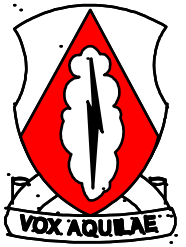
- SIX PERSONNEL

PLANNING CONSIDERATIONS:

- FUEL: 60 GAL / 72 HRS

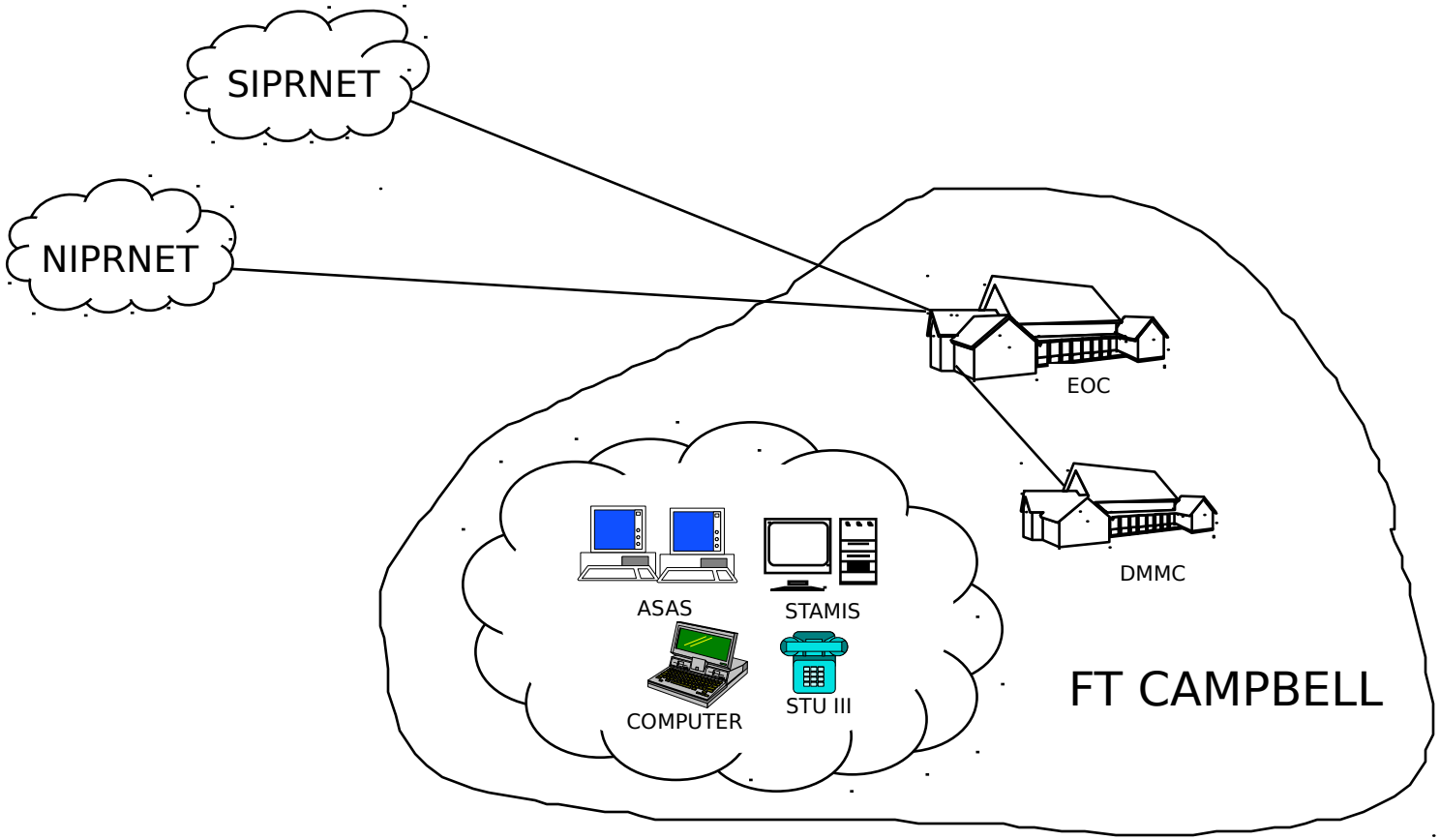
- RANGE:
  - 40 KM FOR LOS RADIO

- SLINGLOAD:
  - 3 X CH-47s BSA PACKAGE
- AIRFRAMES: (AIRLAND ONLY)
  - 3 C-130
  - 1 C-141

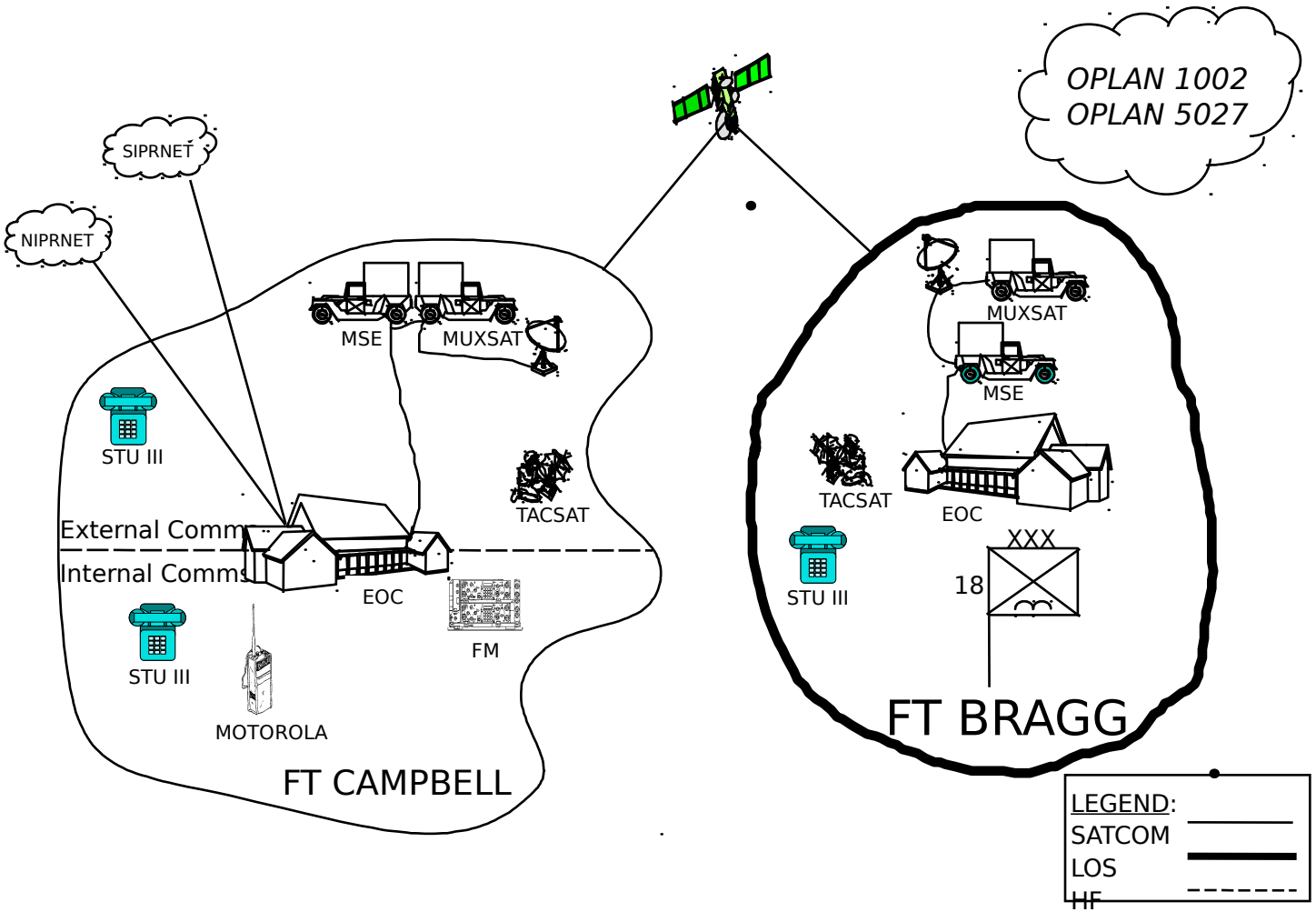


501st SIGNAL BATTALION
HOW WE FIGHT

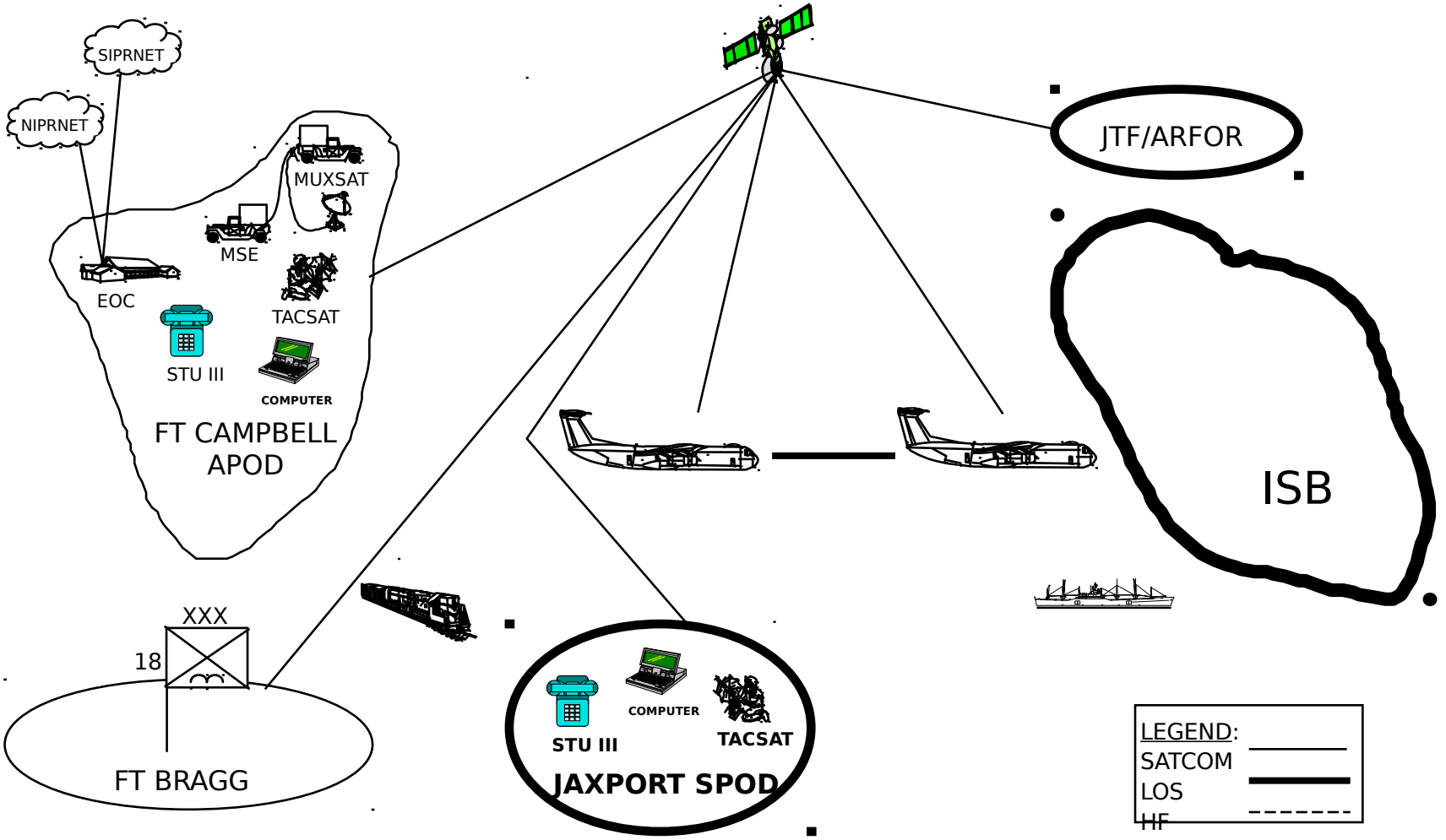
PRE-DEPLOYMENT PHASE



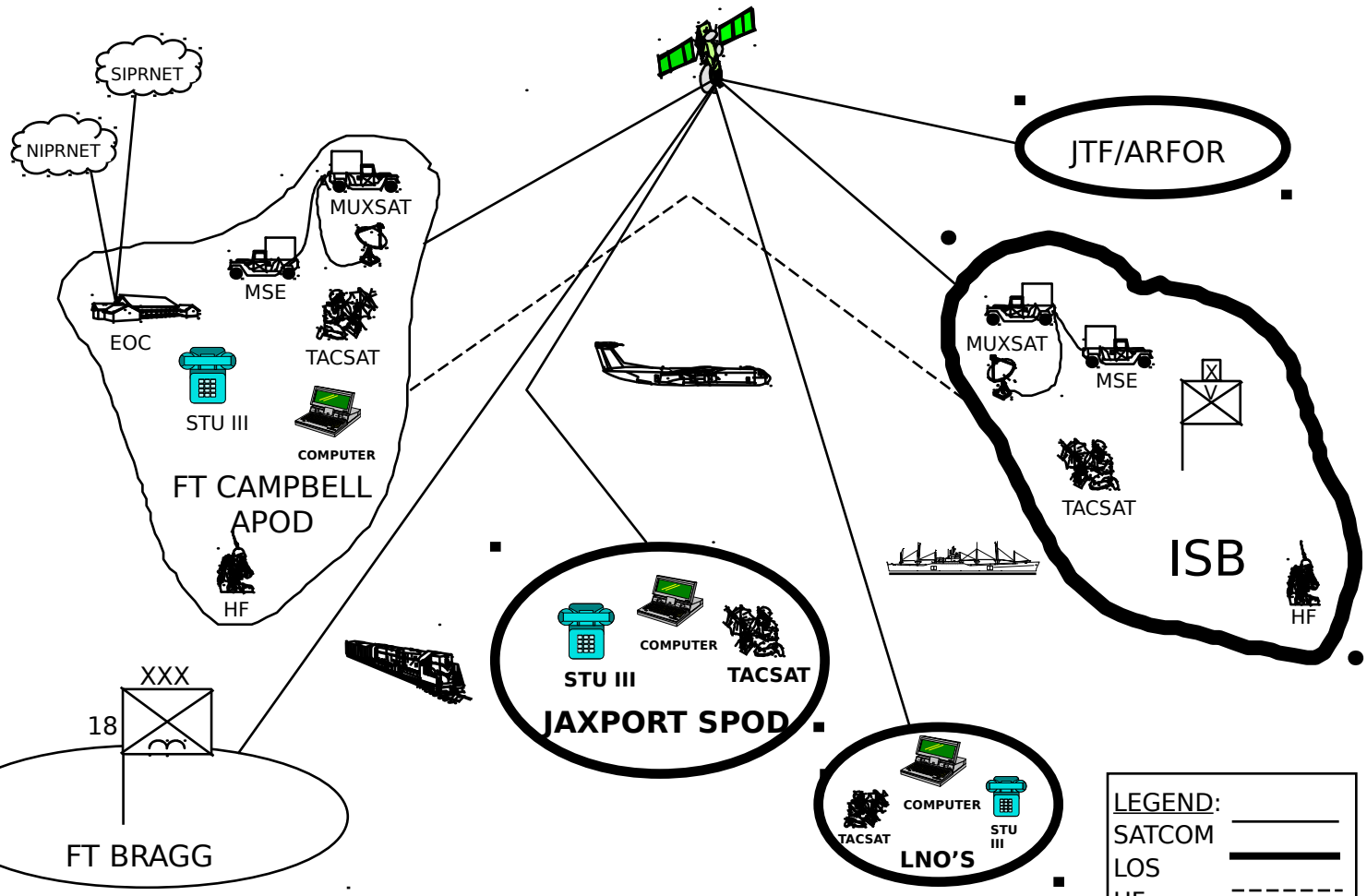
NOTIFICATION, ALERT, UPLOAD



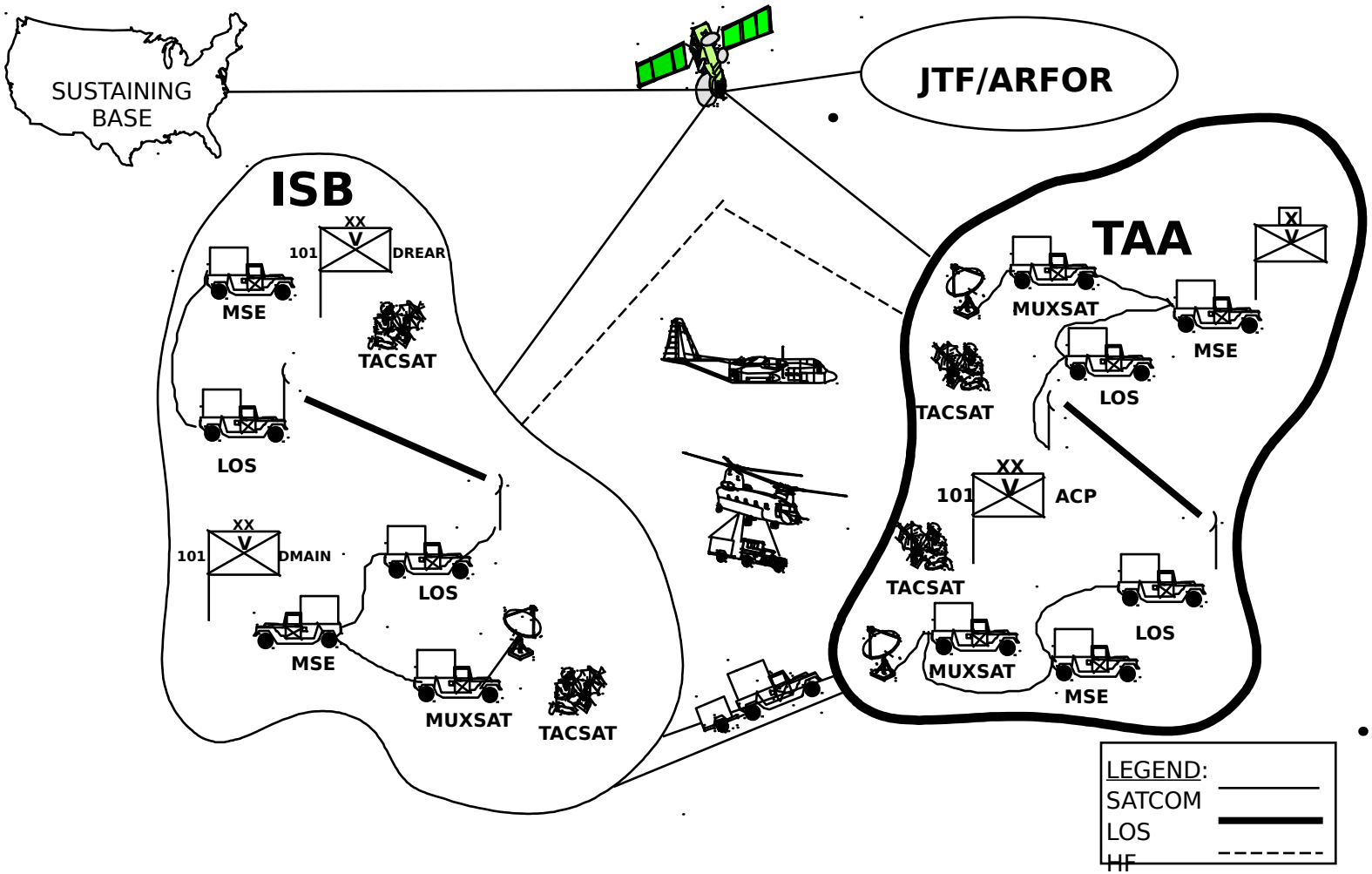
ESTABLISHMENT OF ISB



DEPLOYMENT TO ISB

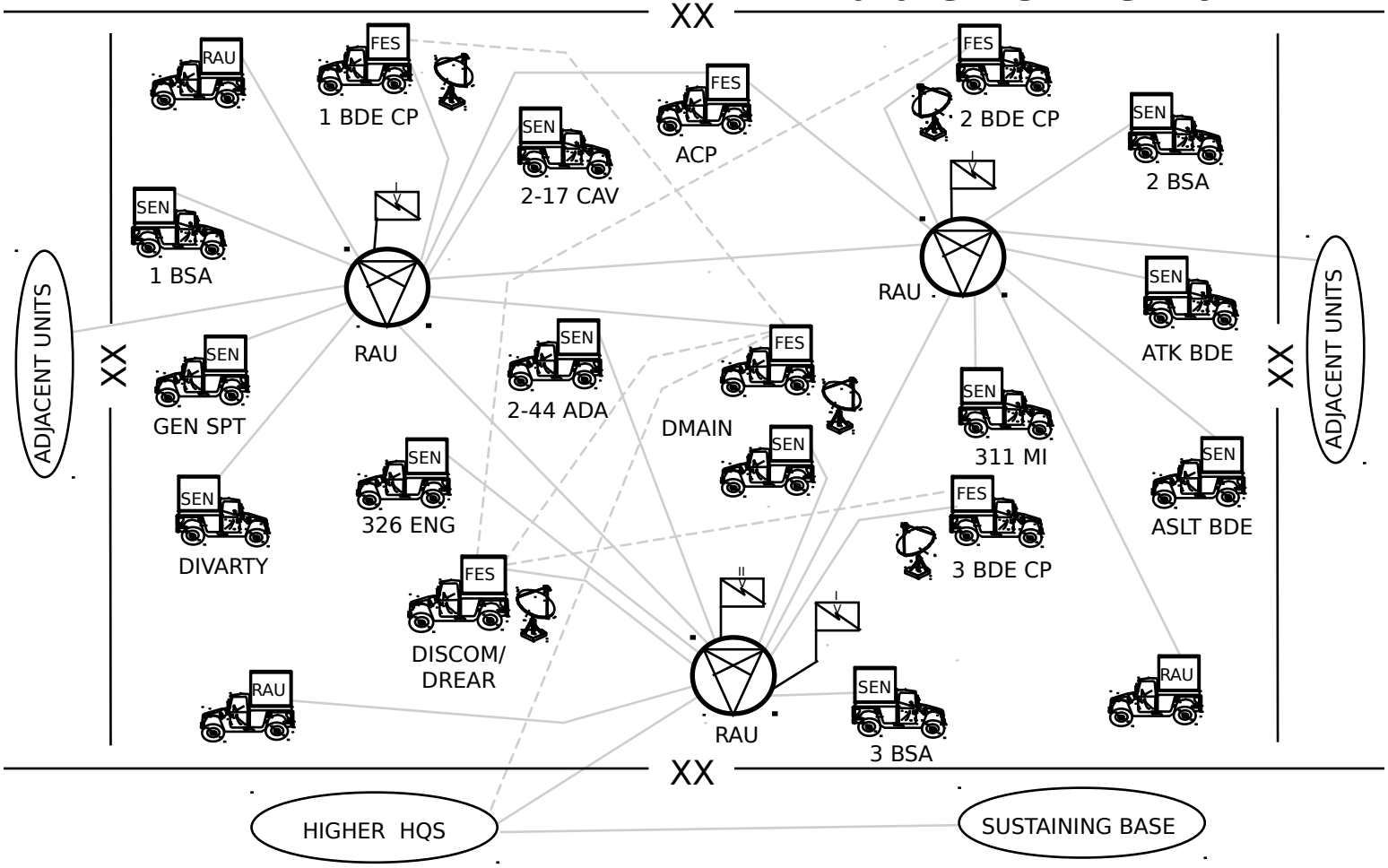


ISB TO TAA

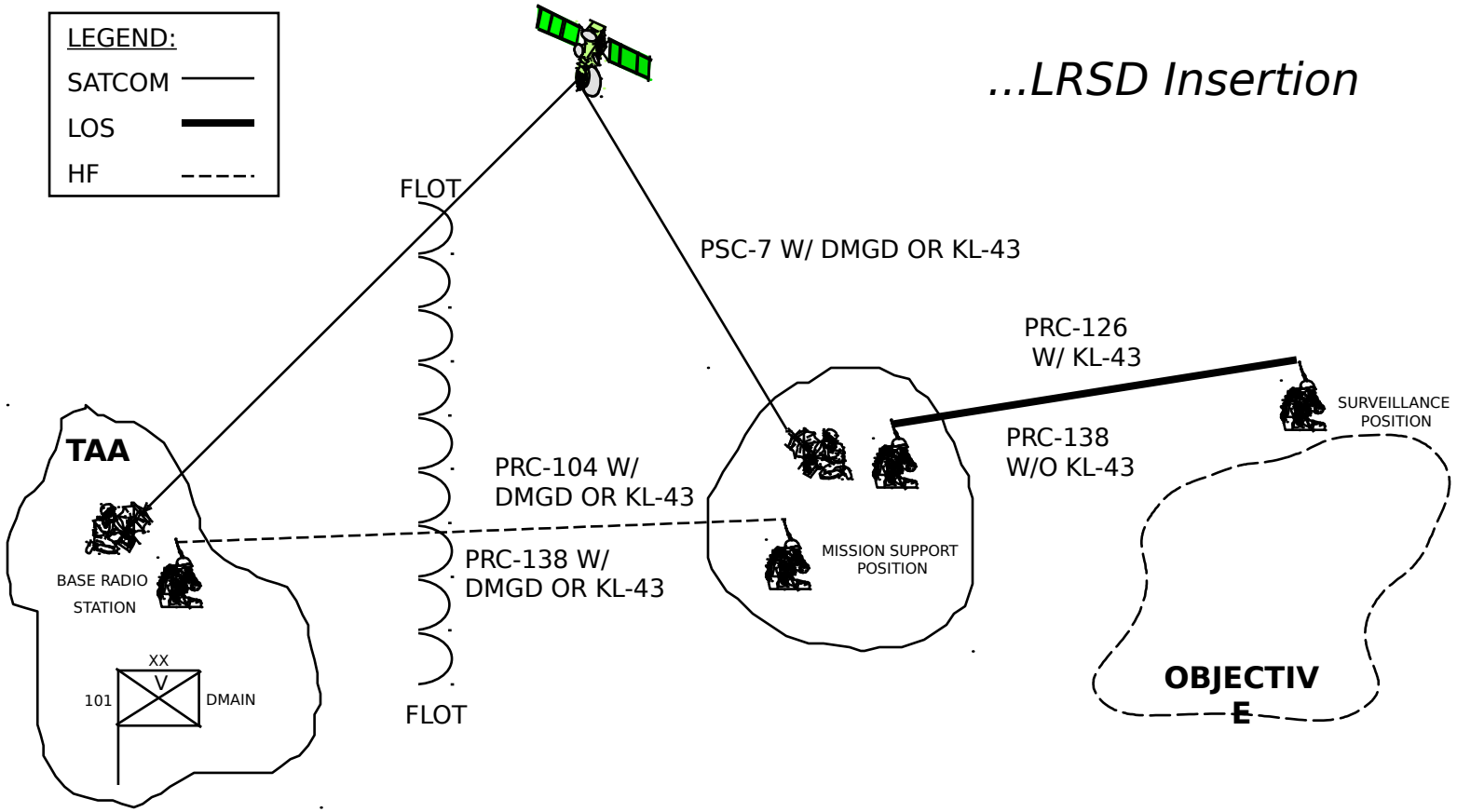

SUSTAINING BASE
JTF/ARFOR
ISB
XX
101
DREAR
MSE
TACSAT
LOS
XX
101
DMAIN
LOS
MSE
MUXSAT
TACSAT
TAA
MUXSAT
MSE
TACSAT
LOS
XX
101
ACP
TACSAT
LOS
MUXSAT
MSE
LEGEND:
SATCOM
LOS
HF

TAA

...Mature MSE Network

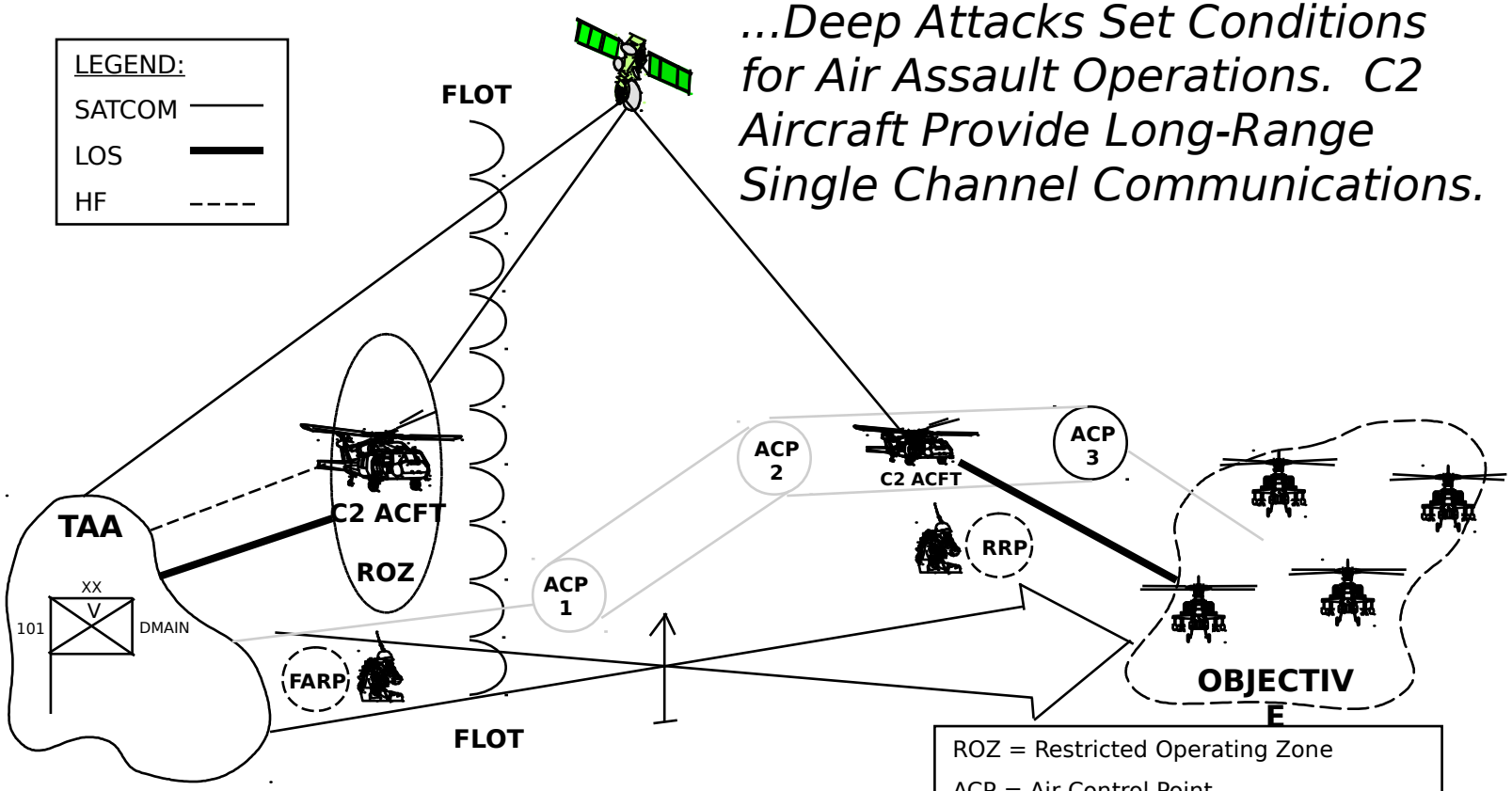


AIR ASSAULT


LEGEND:
SATCOM
LOS
HF
...LRSD Insertion
FLOT
PSC-7 W/ DMGD OR KL-43
PRC-126
W/ KL-43
SURVEILLANCE
POSITION
PRC-138
W/O KL-43
TAA
PRC-104 W/
DMGD OR KL-43
MISSION SUPPORT
POSITION
BASE RADIO
STATION
PRC-138 W/
DMGD OR KL-43
XX
V
101
DMAIN
FLOT
OBJECTIV
E

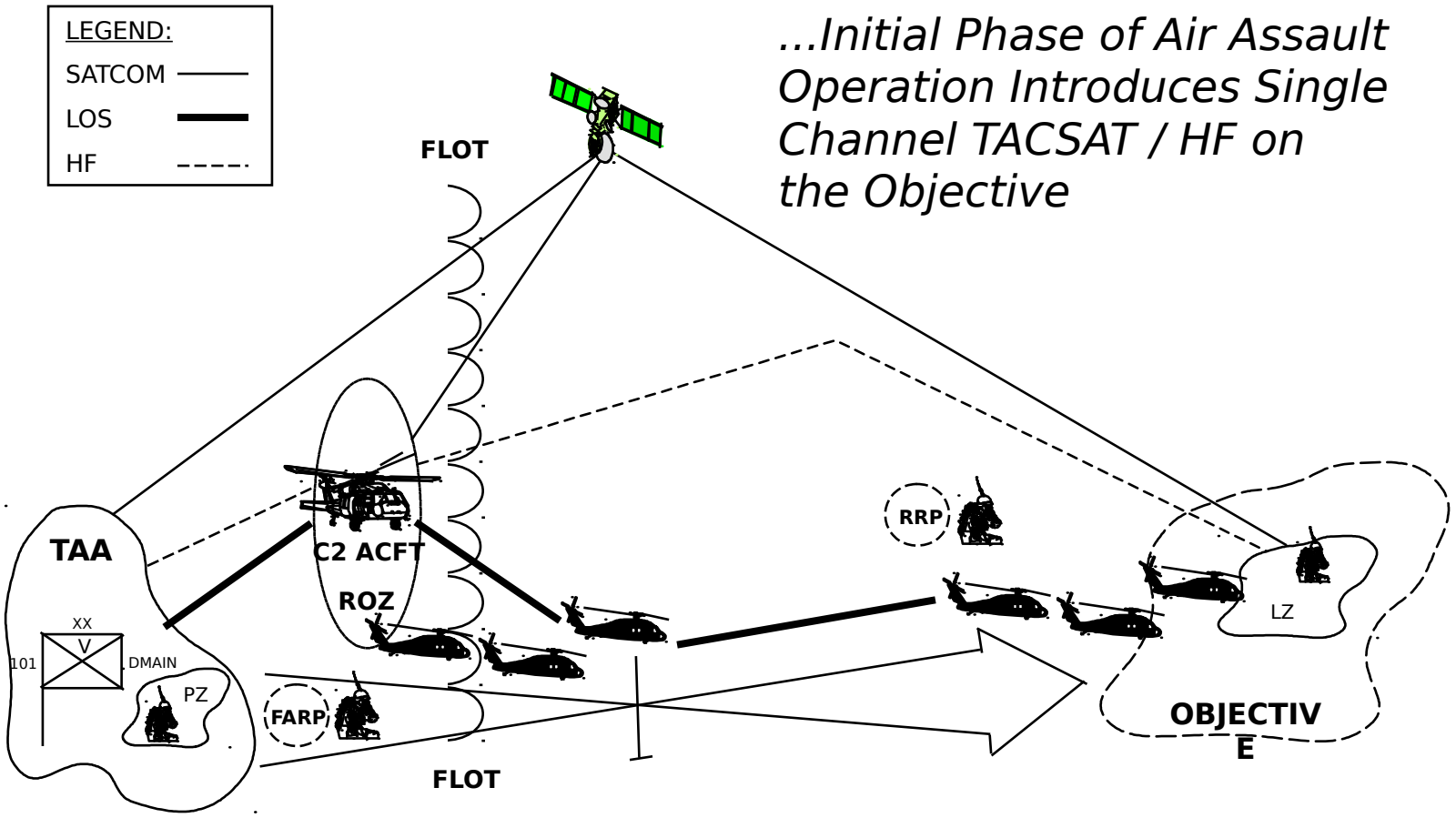
AIR ASSAULT

...Deep Attacks Set Conditions for Air Assault Operations. C2 Aircraft Provide Long-Range Single Channel Communications.

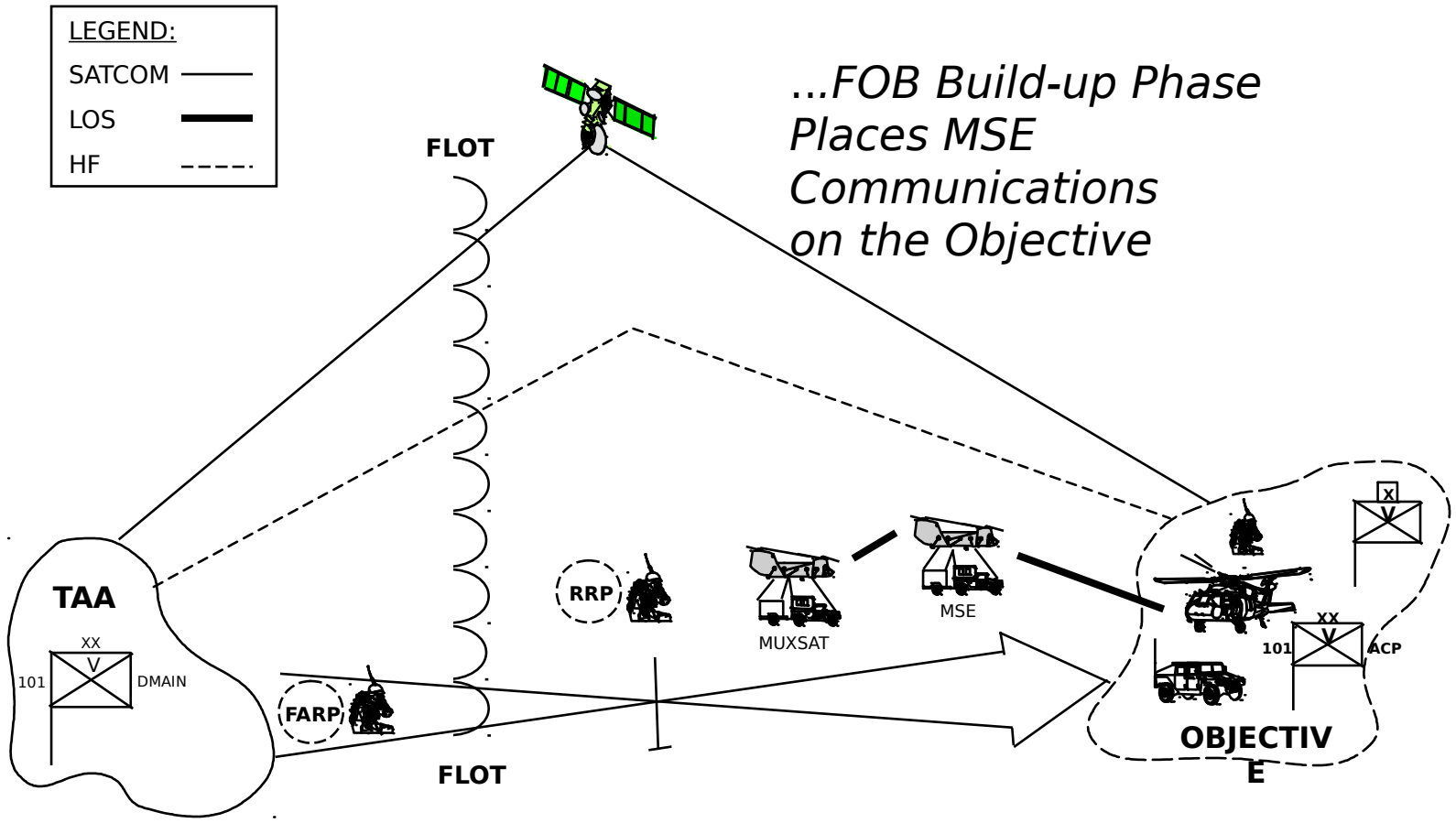


ROZ = Restricted Operating Zone
ACP = Air Control Point
RRP = Rapid Refuel Point
FARP = Forward Arm/Refuel Point

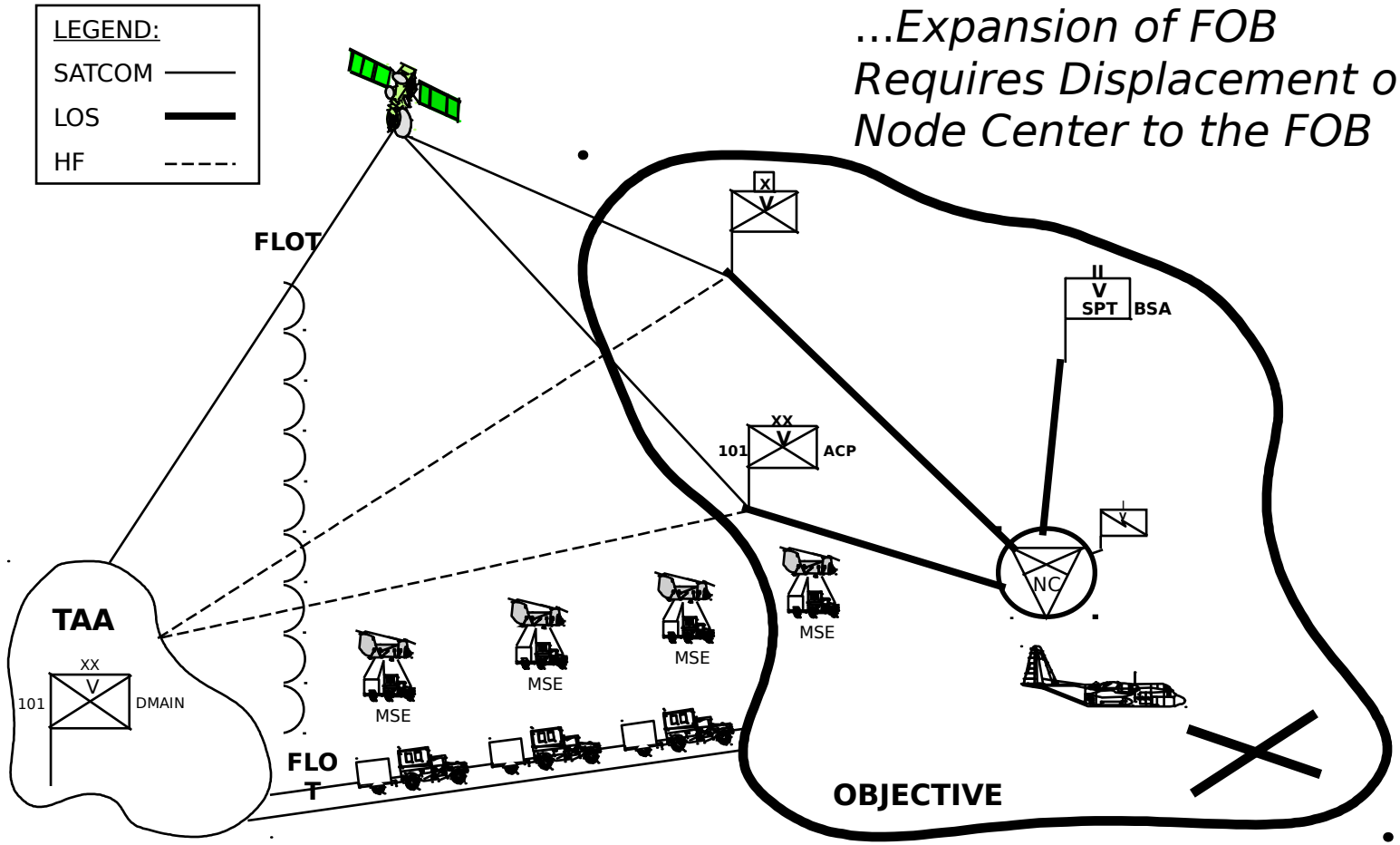
AIR ASSAULT


LEGEND:
SATCOM
LOS
HF
...Initial Phase of Air Assault Operation Introduces Single Channel TACSAT / HF on the Objective
FLOT
TAA
C2 ACFT
ROZ
RRP
LZ
XX
V
101
DMAIN
PZ
FARP
OBJECTIV
E
FLOT

AIR ASSAULT


LEGEND:
SATCOM
LOS
HF
FLOT
...FOB Build-up Phase Places MSE Communications on the Objective
TAA
XX
V
101
DMAIN
FARP
RRP
MUXSAT
MSE
FLOT
XX
V
101
ACP
OBJECTIV
E

AIR ASSAULT


LEGEND:
SATCOM
LOS
HF
...Expansion of FOB
Requires Displacement of
Node Center to the FOB
FLOT
X
V
II
V
SPT
BSA
XX
V
101
ACP
NC
V
TAA
XX
V
101
DMAIN
MSE
MSE
MSE
MSE
FLO
T
OBJECTIVE

PLANNING DATA

PLANNING DISTANCES:

ASIP SINCGARS MANPACK	8 KM
VEHICULAR ASIPSINCGARS (WITH POWER AMP AND OE-254)	30 KM
MSE GRC-226 UHF LOS RADIO	40 KM
MSE RAU FOOTPRINT (RT-1539)	15 KM
TACLAN SEGMENT LENGTH	185 M
CX-11230A CABLE BETWEEN MSE ASSEMBLAGES	1 MI
WF-16 WIRE BETWEEN DNVT AND MSE EQUIPMENT	2 MI
26-PAIR CABLE BETWEEN J-1077 AND MSE SWITCH	250 FT

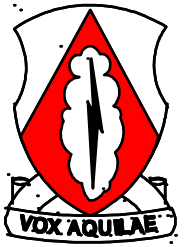
CLASS III / CLASS IX RESUPPLY:

ASIP SINCGARS MANPACK (BA-5590)	30 HOURS
SC TACSAT MANPACK BA-5590 x 2, one for KY-99 and one for PSC-5 BA-5590 x 2 for the PSC-5	24 HOURS
HF AM MANPACK (AN/PRC-104) BA-5590 x 2, one for KY-99 and one for PRC-104	24 HOURS
FUEL FOR 10KW GENERATORS (10 GAL)	24 HOURS

SIGNAL BATTALION POCs

POSITION	NAME	TEL#	EMAIL
CDR/ACofS, G6	LTC MAC IVOR	798-5029	macivorm@emh2.campbell.army.mil
XO	MAJ WASHER	798-5029	washert@emh2.campbell.army.mil
S-3	MAJ MACKENZIE	798-7116	mackenzies@emh2.campbell.army.mil
DEPUTY ACofS, G6	MAJ WOOD	798-7604	wooda@emh2.campbell.army.mil
G6 AUTOMATION	MAJ WATERMAN	798-7718	watermanr@emh2.campbell.army.mil

Current as of 4/28/00



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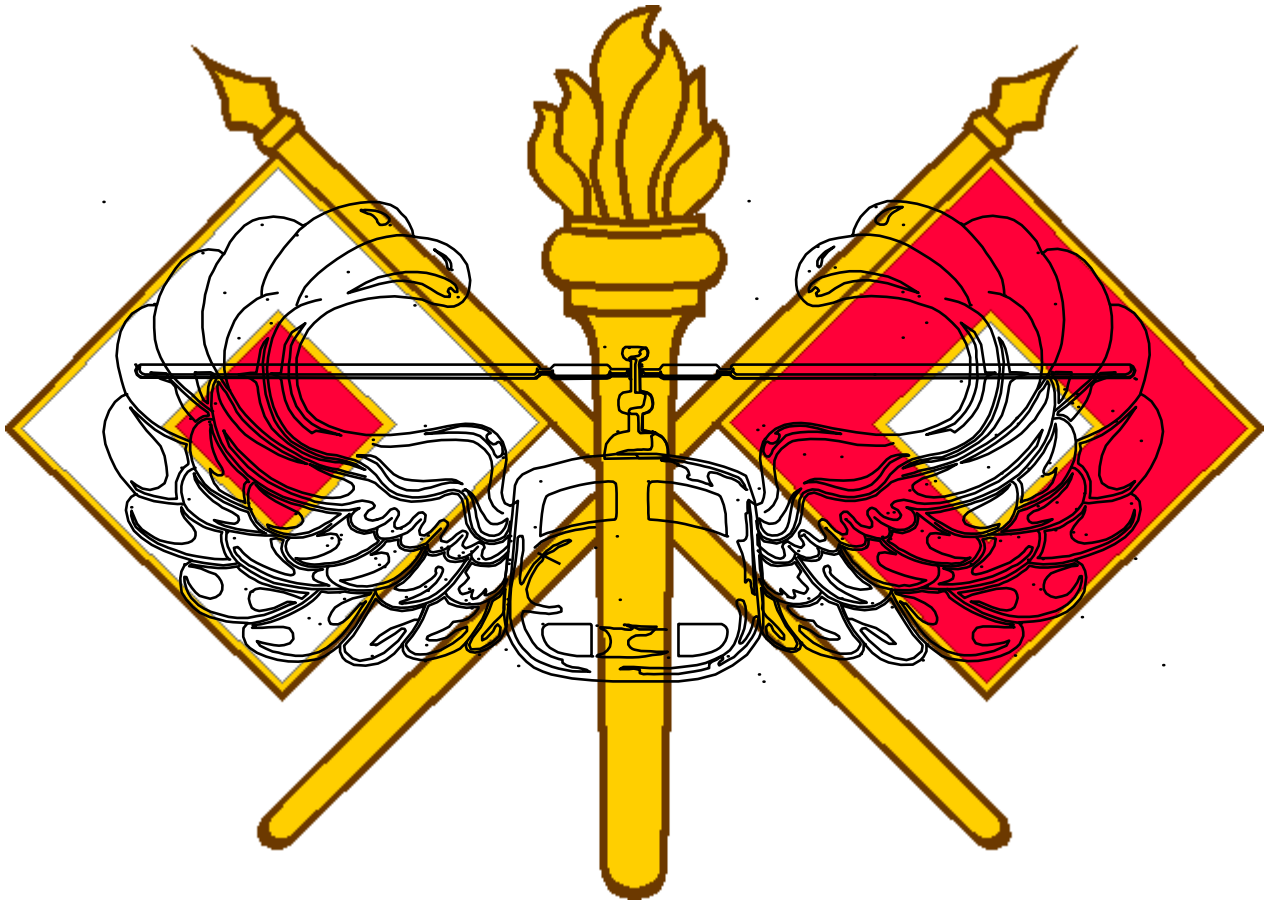
101st AIRBORNE DIVISION (AIR



COMMANDER'S SIGNAL HANDBOOK

VOICE OF THE EAGLE